4757

ORDER NO. AD9006197C2

Service Manual

Receiver

QUARTZ Synthesizer
AM/FM Stereo Receiver

SA-GX200

Color

(K)... Black Type

Area

Country Code	Area	Color
(EG)	F.R. Germany & Italy.	(K)

0CE80539 01000E41 39
SM-SAGX200 1 ST
SVC MNL

SPECIFICATIONS (DIN 45 500)

■ AMPLIFIER SECTION

Power output	
DIN 1 kHz	2 × 60 W (4 Ω)
40 Hz~20 kHz continuous power output both channels driven	2 × 40 W (8 Ω)
Total harmonic distortion	
rated power at 40 Hz~20 kHz	0.05 % (8 Ω)
half power at 1 kHz	0.03 % (8 Ω)
Intermodulation distortion	
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8 Ω	0.5 %
Power bandwidth	
both channels driven, −3 dB	10 Hz~40 kHz (8 Ω)
Damping factor	40 (8 Ω)
Input sensitivity and impedance	
PHONO	3 mV/47 kΩ
CD, VCR 1, VCR 2, TAPE	200 mV/22 kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (8 Ω)	
PHONO	70 dB (IHF, A: 80 dB)
CD, VCR 1, VCR 2, TAPE	80 dB (IHF, A: 90 dB)
Frequency response	
PHONO	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
CD, VCR 1, VCR 2, TAPE	7 Hz~40 kHz (±3 dB)
Bass	50 Hz, +10 dB~−10 dB
Treble	20 kHz, +10 dB~−10 dB
Loudness control (volume at −30 dB)	50 Hz, +9 dB
Output voltage	
VCR 1 AUDIO OUT, TAPE REC OUT	200 mV
Channel balance, 250 Hz~6,300 Hz	±1 dB
Channel separation	55 dB
Headphones output level and impedance	430 mV/330 Ω
Load impedance	
A or B	4 Ω~16 Ω
A and B	8 Ω~16 Ω

■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz
Sensitivity	
S/N 30 dB	1.5 μV (75 Ω)
S/N 26 dB	1.3 μV (75 Ω)
S/N 20 dB	1.2 μV (75 Ω)
IHF usable sensitivity	1.5 μV (IHF'58, 75 Ω)
IHF 46 dB stereo quieting sensitivity	22 μV/75 Ω
Total harmonic distortion	
MONO	0.2 %
STEREO	0.3 %
S/N	
MONO	60 dB (75 dB, IHF)
STEREO	58 dB (71 dB, IHF)
Frequency response	20 Hz~15 kHz, +1 dB~−2 dB

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

4757

Alternate channel selectivity	65 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
Carrier leak	
19 kHz	−55 dB (−60 dB, IHF)
38 kHz	−50 dB (−55 dB, IHF)
Channel balance (250 Hz~6,300 Hz)	±1.5 dB
Limiting point	1.2 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522 kHz~1611 kHz (9-kHz steps) 530 kHz~1620 kHz (10-kHz steps)
Sensitivity (S/N 20 dB)	20 μV, 330 μV/m
Selectivity (±9kHz) (at 999kHz)	55 dB
Image rejection (at 999kHz)	40 dB
IF rejection (at 999kHz)	55 dB

■ GENERAL

Power consumption	360 W
Power supply	AC 50 Hz/60 Hz, 220 V
Dimensions (W × H × D)	430 × 124 × 300 mm
Weight	6.5 kg

Note:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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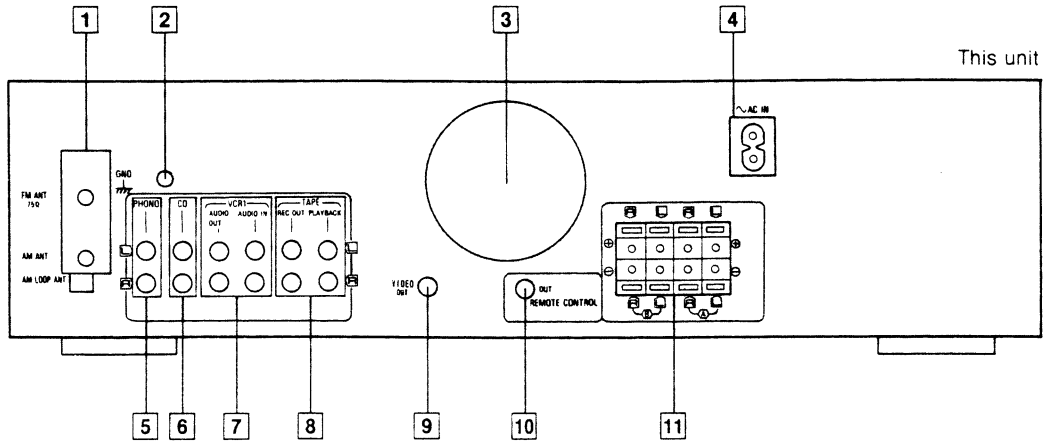
■ ACCESSORIES

- AC power supply cord (1) (SFDAC05E03)
- FM indoor antenna (1) (SSA270M)
- AM loop antenna (1) (SPB1163T)
- AM antenna holder (1) (SMA233–1M)
- Screws (2) (XTN3+10AFZ)
- Remote-control transmitter (1) (RAK–SA301E)
- Batteries (2) (UM–4NE/2S)

■ CONNECTIONS TO EQUIPMENT



1 Antenna connection terminals

2 "GND" terminal

Connect the turntable's ground wire to this terminal (if applicable).

3 Cooling fan

The cooling fan operates at high output power levels only.

4 AC IN socket (AC IN)

Connect this socket to an AC outlet on the wall by using the included AC power supply cord.

5 "PHONO" terminals

Connect a turntable only. Do not connect any other sound source to these terminals.

* Phono input capacitance is about 270pF.

6 "CD" terminals

Connect a compact disc player or other sound source.

7 "VCR 1" terminals

Connect a video cassette recorder.
(See the operating instructions of the VCR.)

8 "TAPE" terminals

Connect a tape deck.

9 "VIDEO OUT" terminal

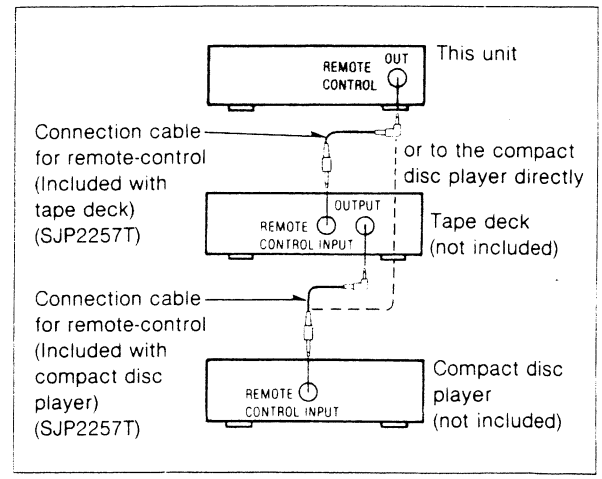
Connect a video connection cable (not inclueded) to the video input terminal of VCR or TV.

10 Remote-control terminal

This terminal can be used only with Technics components which have the appropriate remote-control terminal.
(Consult your dealer for details.)
Proper connection with remote-control connection cables SJP2257T will allow control of some functions from this unit's remote-control transmitter. (See page 6 for details.)

OUT:

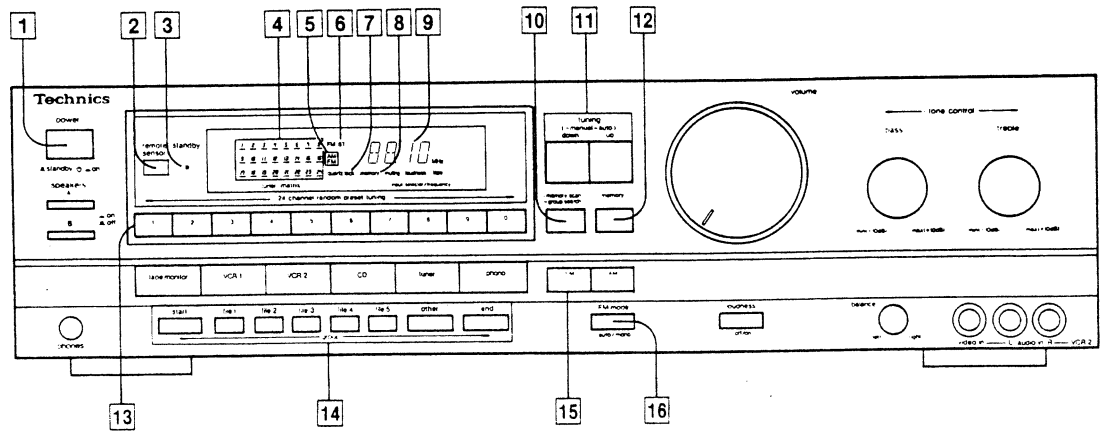
Connect a tape deck and/or compact disc player as shown below.


REMOTE CONTROL
OUT
This unit
Connection cable for remote-control (Included with tape deck) (SJP2257T)
or to the compact disc player directly
OUTPUT
REMOTE CONTROL INPUT
Tape deck (not included)
Connection cable for remote-control (Included with compact disc player) (SJP2257T)
REMOTE CONTROL INPUT
Compact disc player (not included)

11 Speaker connection terminals

■ FRONT PANEL CONTROLS AND FUNCTIONS

Tuner section



1 Power "standby ⏻/on" switch (power/■ standby ⏻ ▬ on)

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the standby ⏻ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

2 Remote-control signal receptor (remote sensor)

Receives the signals from the remote-control transmitter.

3 "standby" indicator (standby)

This indicator illuminates when the power switch of this unit or that of the remote control is switched "OFF". Its purpose is to alert the user of the constant supply voltage to the internal circuitry even with the power switch OFF.

4 Preset channel matrix display (tuner matrix)

When an entry is made to the memory, the bar under the figure illuminates.
The bar of the "channel" now being received flashes continuously.

5 Band indicators (AM/FM)

Indicates the selected band.

6 FM stereo indicator (AM/FM)

This indicator automatically illuminates when an FM stereo broadcast is being received.
Note:
It will not illuminate if the FM mode selector is set to the monaural mode.

7 Quartz-lock indicator (quartz lock)

This indicator illuminates when the unit is tuned precisely to a broadcast station.

8 Memory indicator (memory)

This indicator illuminates when the memory button is pressed.

9 Audio input selector/frequency display (input selector/frequency)

Displays the selected source or broadcast frequency.

10 Memory-scan/group-search button (-memory scan/—group search)

This button is used to scan the memory presets within a group (for about three seconds each) or to search for the desired group.

11 Tuning buttons (tuning)

These buttons are used for tuning to the desired broadcast station.

12 Memory button (memory)

This button is used when presetting broadcast station frequencies into memory.

13 Preset-tuning buttons (1 – 0) (24 channel random preset tuning)

These buttons are used to preset broadcast frequencies into the memory of this unit, and to recall the desired preset stations.

14 Group registration buttons (group)

These buttons are used to assign memory presets to the desired group or to select the desired group.

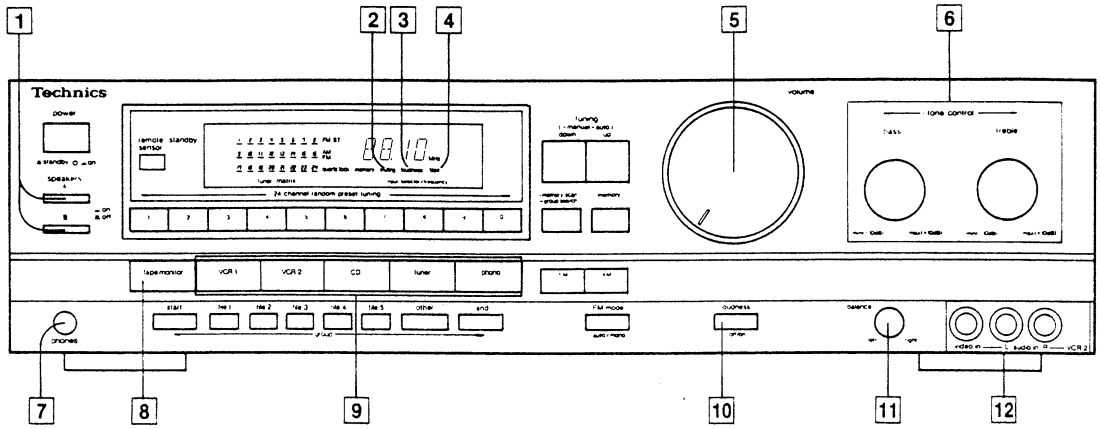
15 Band selectors

FM: Press this button to listen to an FM broadcast.
AM: Press this button to listen to an AM broadcast.
allocation: When the AM button is pressed for about 4 seconds, the AM frequency step will change to 10 kHz per step. (This step is set to 9 kHz before shipment.) In order to return to the original frequency indication, press this button for about 4 seconds again.

16 FM mode selector (FM mode)

This unit automatically switches to the stereo mode when an FM stereo broadcast is received. This selector is used to select the mode (stereo or monaural) of FM broadcast signals.

Amplifier section



1 Speaker selectors (speakers)

These selectors are used to select the apeaker system(s) (A and/or B).

2 Muting indicator (muting)

This indicator will illuminate when the muting button (on the remote-control transmitter) is pressed.
To cancel the muting function without using the remote-control transmitter, press and hold the "phono" input selector of this unit for about 5 seconds.
Note:
The unit will switch to the phono mode.

3 Loudness indicator (loudness)

This indicator will illuminate when the loudness switch is pressed.

4 Tape indicator (tape)

This indicator will illuminate when the tape-monitor switch is pressed.

5 Volume control (volume)

6 Tone controls (bass/treble)

The bass control is used to adjust the low-frequency sound range, and the treble control is used to adjust the high-frequency sound range.

7 Headphone jack (phones)

8 Tape-monitor switch

Press this button to listen to a tape.
No other source selected by an input selector can be heard while the tape indicator is illuminated. To listen to some other source, press this switch once again.

9 Input selector buttons

These buttons are used to select the sound source to be heard, such as a disc, radio broadcasts, etc. The selected sound source is shown on the audio input selector/frequency display.

10 Loudness switch (loudness)

Set to the "on" position (the loudness indicator will illuminate); when listening to music at low volume. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is in this position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

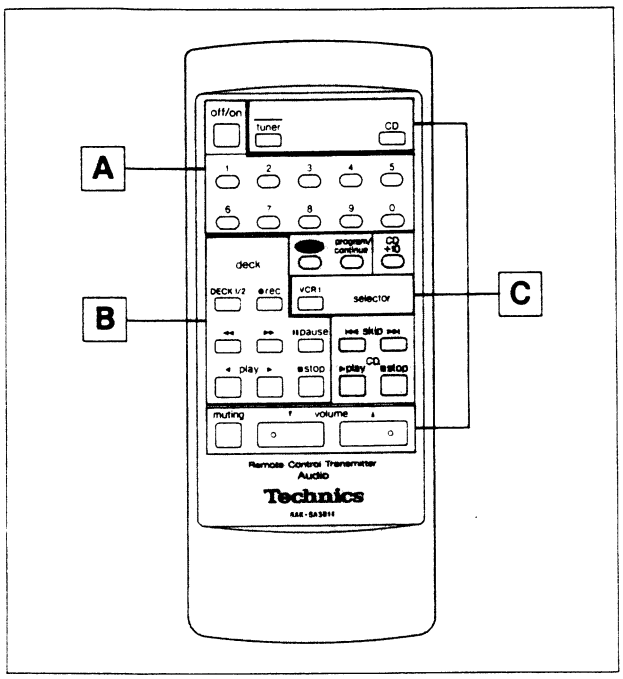
11 Balance control (balance)

12 "VCR 2" terminals (VCR 2)

These terminals are used for tape-to-tape recording if a second VCR is connected here.

■ REMOTE-CONTROL OPERATION

- This remote-control transmitter can be used for control of a Technics cassette tape deck or a compact disc player with a remote-control terminal.
  Consult your dealer for details.
- For detailed information concerning operation steps, etc., please refer to the appropriate page for each unit and the respective operating instructions.



Before beginning

Make sure that the power switch of each unit is set to the "on" position.

A Tuner controls

off/on This key can be used for ON and OFF switching of this unit.
When switching the power ON and OFF, be sure to first press the "tuner" button on amplifier controls.

1 – 0 Press this key to select the desired preset channel.
When these buttons are used, be sure to first press the "tuner" button on amplifier controls.

- **To designate channels 1 – 9:** Press the appropriate (1 – 9) preset-tuning button.

Note: When selecting channel 1 or channel 2, enter the selection "01" or "02". If only "1" or "2" is pressed, channel access will be delayed by two seconds.

- **To designate channels 10 – 24:**

① Press the button for the left digit (1 or 2).
② Press the button for the right digit (1 – 0) within 2 seconds after pressing the first button.

Example: To designate channel 12
Press the "1" button and then the "2" button.

B Tape deck controls

DECK 1/2 Press this key to select the deck (tape deck 1 or tape deck 2) to be used.

◀ PLAY / PLAY ▶ ▶: For the "A"-side of the tape
◀: For the "B"-side of the tape
Press one of these keys to begin the playback or recording, pressing the key corresponding to the side of the tape to be played (or recorded).
Note: Depending on which Technics tape deck is used in combination with this unit, tape deck 1 might be the "A"-side playback-only type.

deck ■stop Press this key to stop tape movement.

◀◀ ▶▶
Press this key to advance or rewind the tape while the unit is in the stop mode.
Press this key to select the desired tune while the unit is in the play mode.
(Only applicable to a Technics tape deck with the "music select" functions.)

❚❚pause Press this key to temporarily stop playback or recording.
Press the playback key to resume the play or recording.

● rec Press this key to change to the recording stand-by mode.

Note
Depending on which Technics tape deck is used in combination with this unit, it might be that pause of the playback (and the recording), and the recording functions of tape deck 1 not be possible by using the remote-control transmitter.

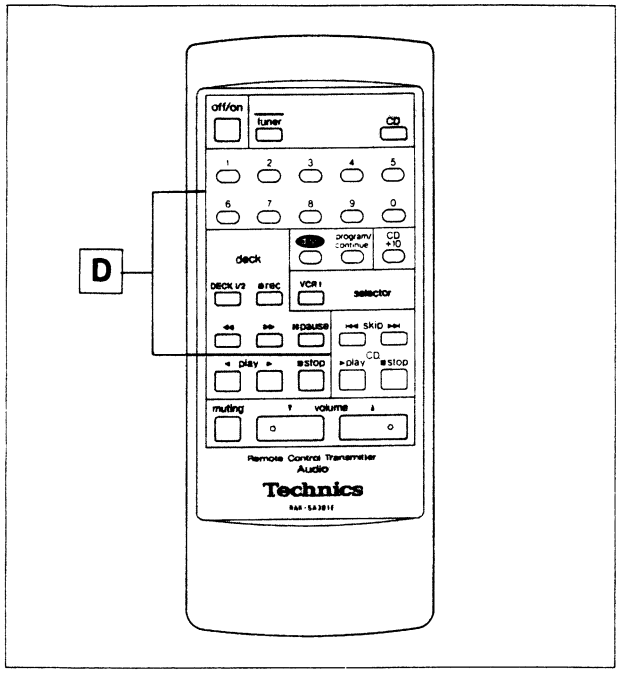
C Amplifier controls

tuner / CD These sound keys are used to select the source (radio broadcasts or compact disc) to be heard.

muting Press this key to temporarily reduce the volume level.
The volume level is attenuated by 20 dB (approx. 1/10).
Press once again to return to the previous volume level.

▼ volume ▲ Press this key to adjust the volume level.

VCR1 Press this key when a TV broadcast is to be received at the VCR.



D Compact disc player controls

play — Press this key to start the play.

stop — Press this key to stop the play.

SKIP — Press one of these buttons briefly to move the pick-up to the beginning of a specific track.

disc — If a Technics multi compact-disc player is used in combination with this unit, the disc to be played can be selected by first pressing this button and then pressing the appropriate "numeric button".

program/ continue — Press to select the desired play mode. ("program" or "continue")

1 ~ CD +10 — These buttons can be used to select track number.
When these buttons are used, be sure to first press the "CD" button on amplifier controls.

Note:
To select a track numberd 10 or higher in the direct access play or program play mode, first press the "+10" button the necessary number of times and then press the appropriate "numeric button".

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:
- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:
1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

(1) Turn off the power supply. Using a 10Ω, 5W resistor connect both ends of power supply capacitors (C701, C702, 8200μF) in order to discharge the voltage.

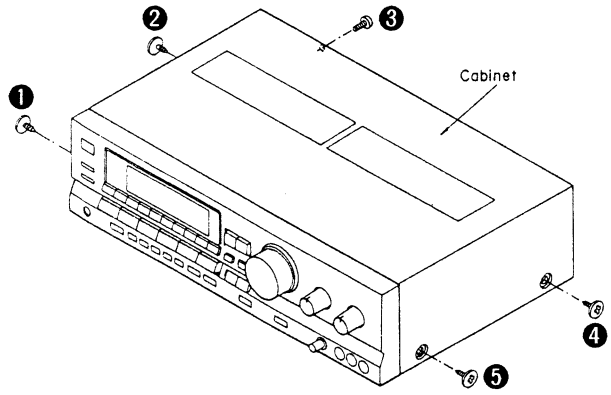
(2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 220V.

Power supply voltage	AC220V
Consumed current 50/60Hz	100 ~ 205mA

■ DISASSEMBLY INSTRUCTIONS

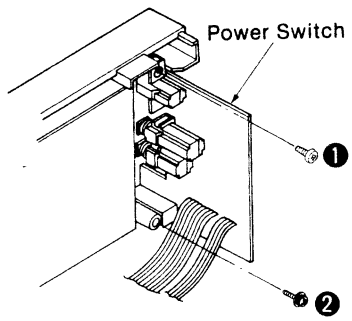
"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the cabinet
Procedure 1	



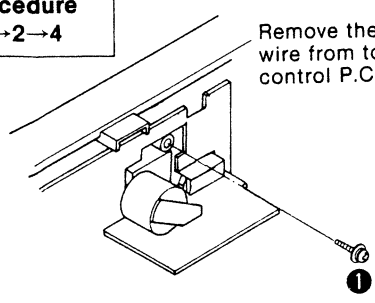
• Remove the 5 screws (❶~❺).

Ref. No. 3	Removal of the power switch P.C.B.
Procedure 1→2→3	

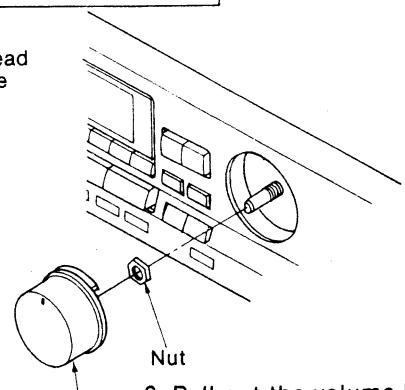


• Remove the 2 screws (❶, ❷).

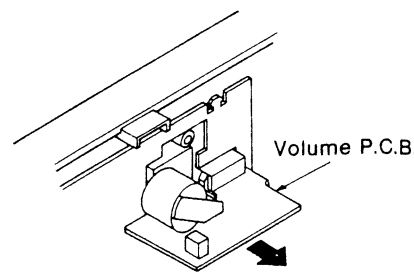
Ref. No. 4	Removal of the volume P.C.B.
Procedure 1→2→4	



1. Remove the 1 screw (❶).

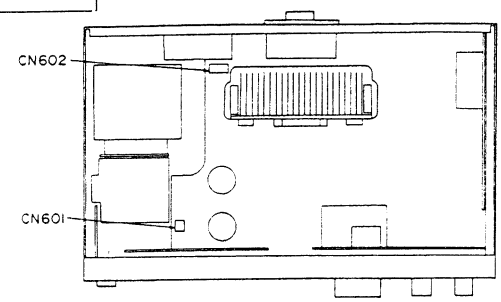


2. Pull out the volume knob.
3. Remove the nut.

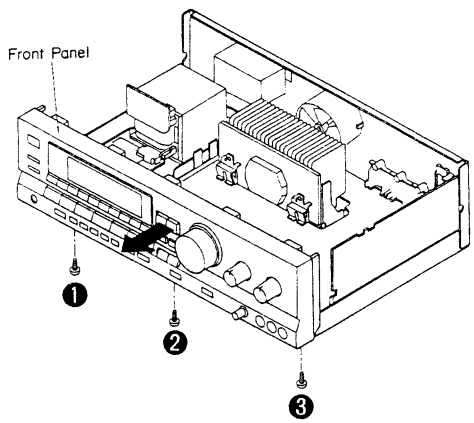


4. Remove the volume P.C.B. in the direction of the arrow.

Ref. No. 2	Removal of the front panel
Procedure 1→2	1. Remove the 2 flat cables (CN601, CN602)

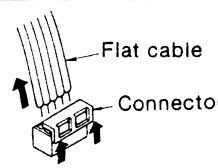


2. Remove the 3 screws (❶~❸).
3. Remove the front panel in the direction of the arrow.



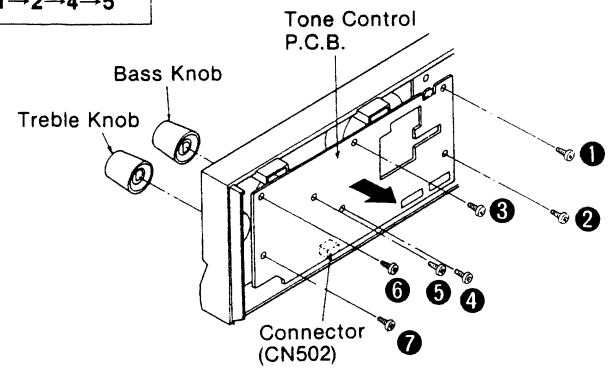
How to remove the flat cable

1. Lift the connector.
2. Pull out the flat cable.



Ref. No. 5	Removal of the tone control P.C.B.

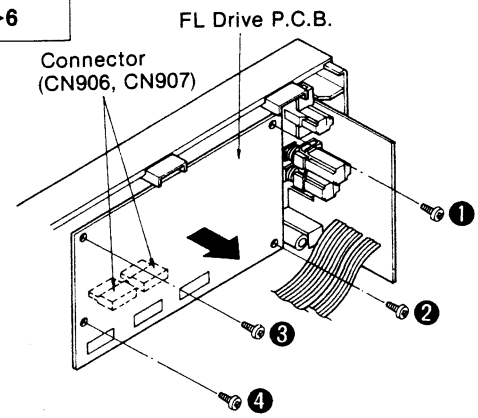
Procedure
1→2→4→5



1. Pull out the bass knob and treble knob.
2. Remove the 7 screws (❶~❼).
3. Remove the tone control P.C.B. in the direction of the arrow. (Take care of CN502.)

Ref. No. 6	Removal of the FL drive P.C.B.

Procedure
1→2→6



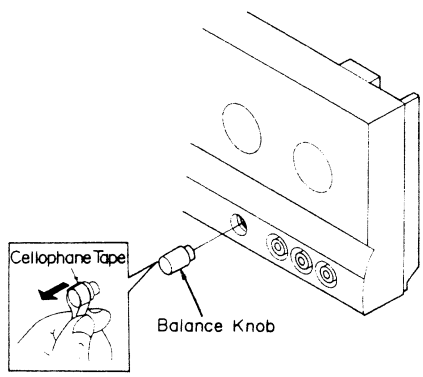
1. Remove the 4 screws (❶~❹).
2. Remove the FL drive P.C.B. in the direction of the arrow. (Take care of CN906, CN907.)

Ref. No. 7	Removal of the operation P.C.B., balance VR P.C.B. and VCR 2 jack P.C.B.

Procedure
1→2→4→5
→6→7

■ Balance VR P.C.B.

1. Pull out the balance knob.
2. Remove the 1 screw (❶).

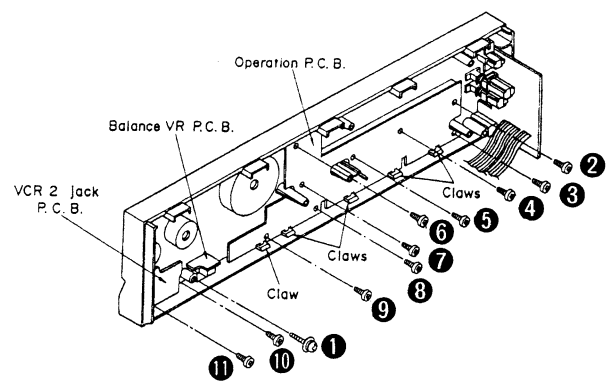


■ Operation P.C.B.

1. Remove the 8 screws (❷~❾).
2. Release the 5 claws.

■ VCR 2 jack P.C.B.

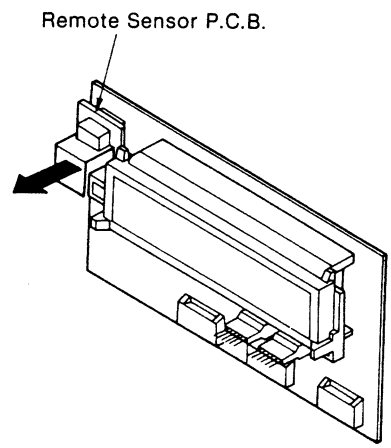
1. Remove the 2 screws (❿, ⓫).



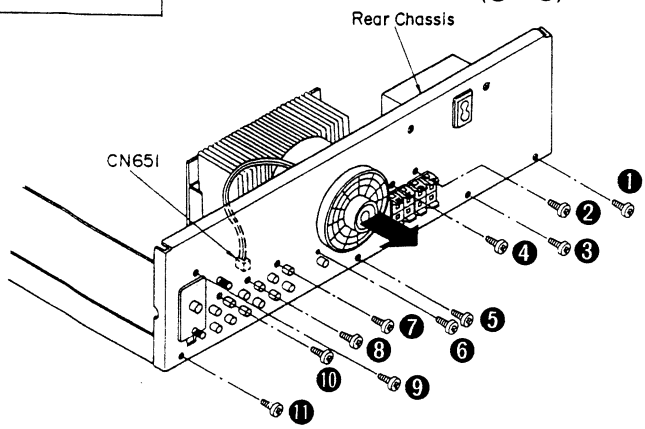
Ref. No. 8	Removal of the remote sensor P.C.B.

Procedure
1→2→6→8

- Remove the remote sensor P.C.B. in the direction of the arrow.

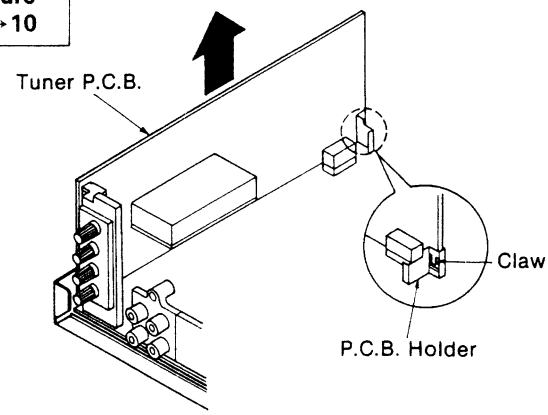


Ref. No. 9	Removal of the rear chassis
Procedure 1→9	1. Remove the 1 connector (CN651). 2. Remove the 11 screws (❶~⓫).



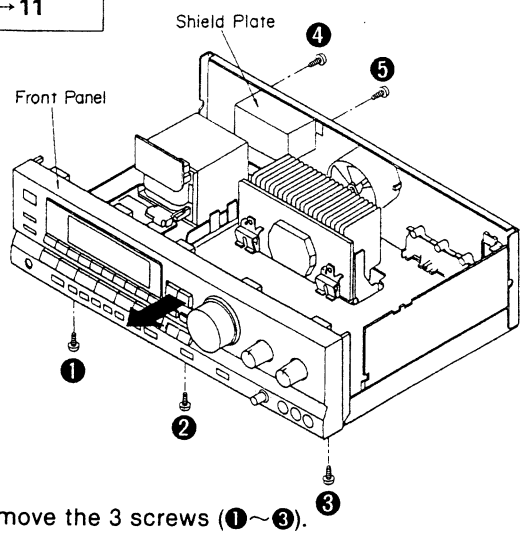
3. Remove the rear chassis in the direction of the arrow.

Ref. No. 10	Removal of the tuner P.C.B.
Procedure 1→9→10	

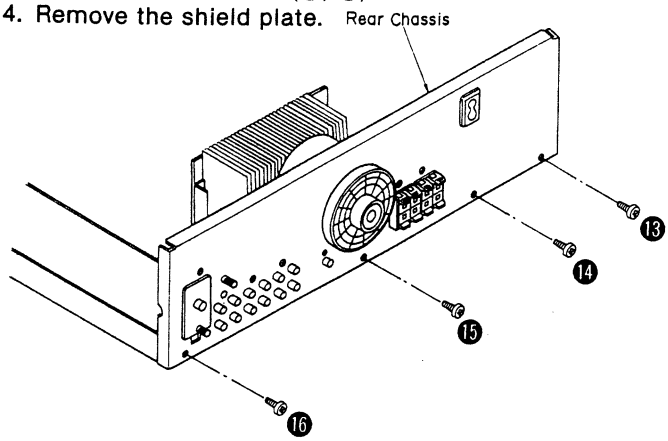


1. Release the 1 claw.
2. Remove the tuner P.C.B. in the direction of the arrow.

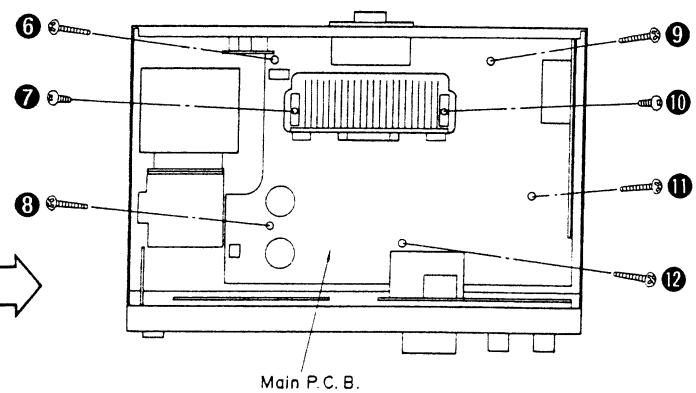
Ref. No. 11	How to chack the main P.C.B.
Procedure 1→11	



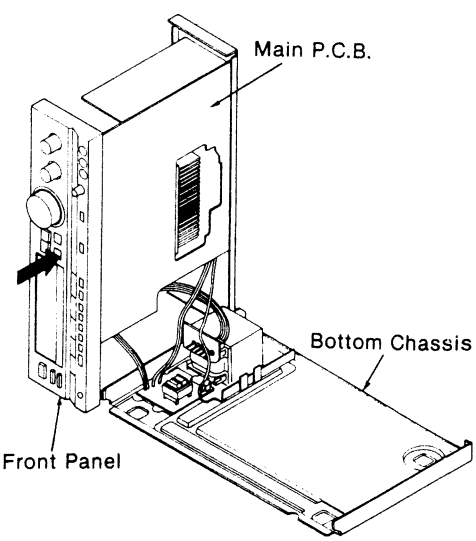
1. Remove the 3 screws (❶~❸).
2. Remove the front panel in the direction of the arrow.
3. Remove the 2 screws (❹, ❺).
4. Remove the shield plate.



6. Remove the 4 screws (⓭~⓰).

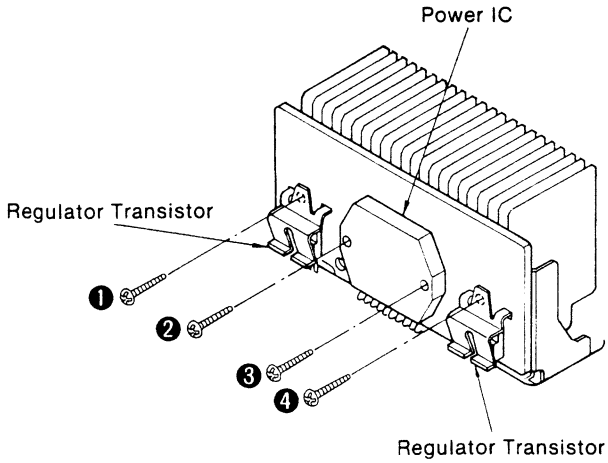


5. Remove the 7 screws (❻~⓬).



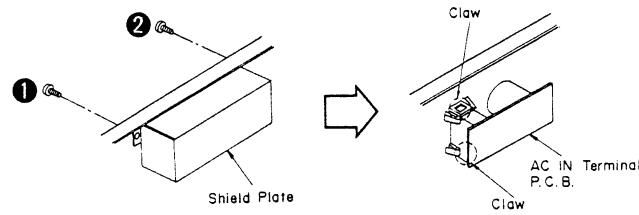
7. Remove the bottom chassis.
8. Reinstall the front panel to the main P.C.B.

Ref. No. 12	Removal of the power IC and regulator transistor
Procedure 1→11→12	1. Unsolder the power IC or regulator transistor. 2. Remove the 4 screws (❶~❹).



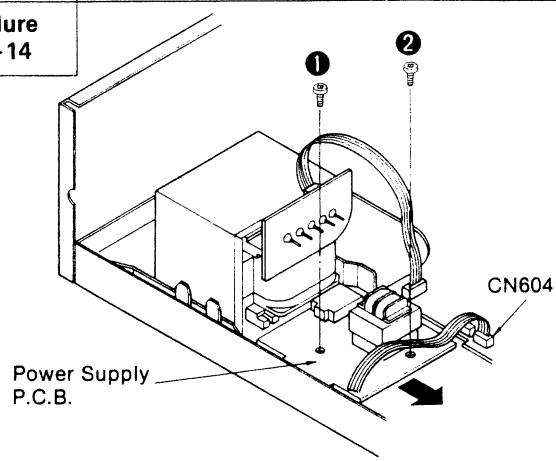
- When mounting the power IC or regulator transistor, apply silion thermal compound (SZZ0L15 or equivalent) to the rear of the power IC or regulator transistor.

Ref. No. 13	Removal of the AC IN TERMINAL P.C.B.
Procedure 1→9→13	



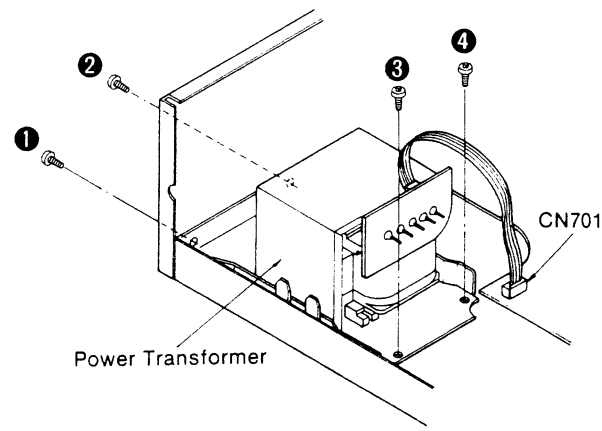
1. Remove the 2 screws (❶, ❷).
2. Remove the shield plate.
3. Release the 2 claws.

Ref. No. 14	Removal of the power supply P.C.B.
Procedure 1→2→14	



1. Remove the 1 flat cable (CN604).
2. Remove the 2 screws (❶, ❷).
3. Remove the power supply P.C.B. in the direction of the arrow.

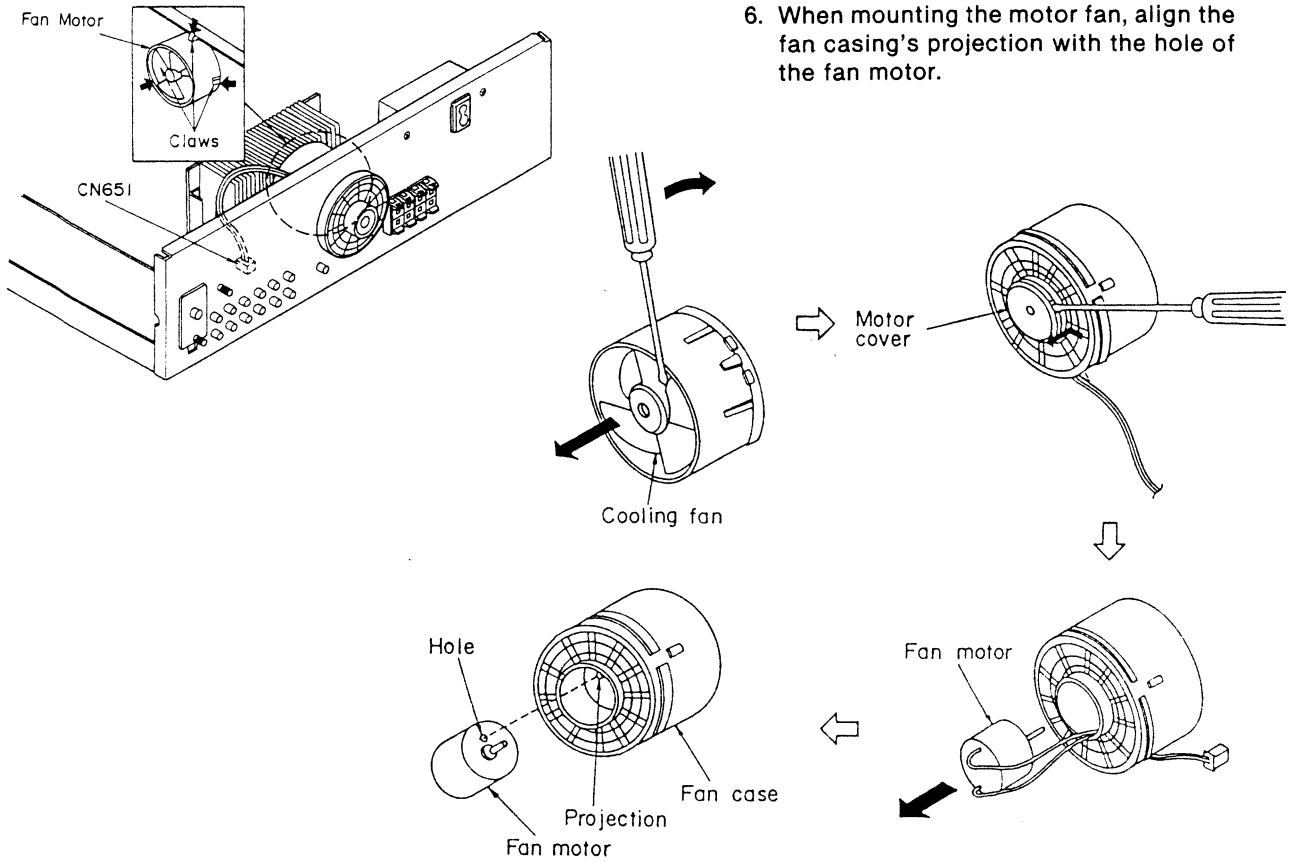
Ref. No. 15	Removal of the power transformer
Procedure 1→2→14→15	



1. Remove the 1 flat cable (CN701).
2. Remove the 4 screws (❶~❹).

Ref. No. 16	Removal of the fan motor
Procedure 1→16	1. Pull out the 1 connector (CN651). 2. Release the 3 claws.

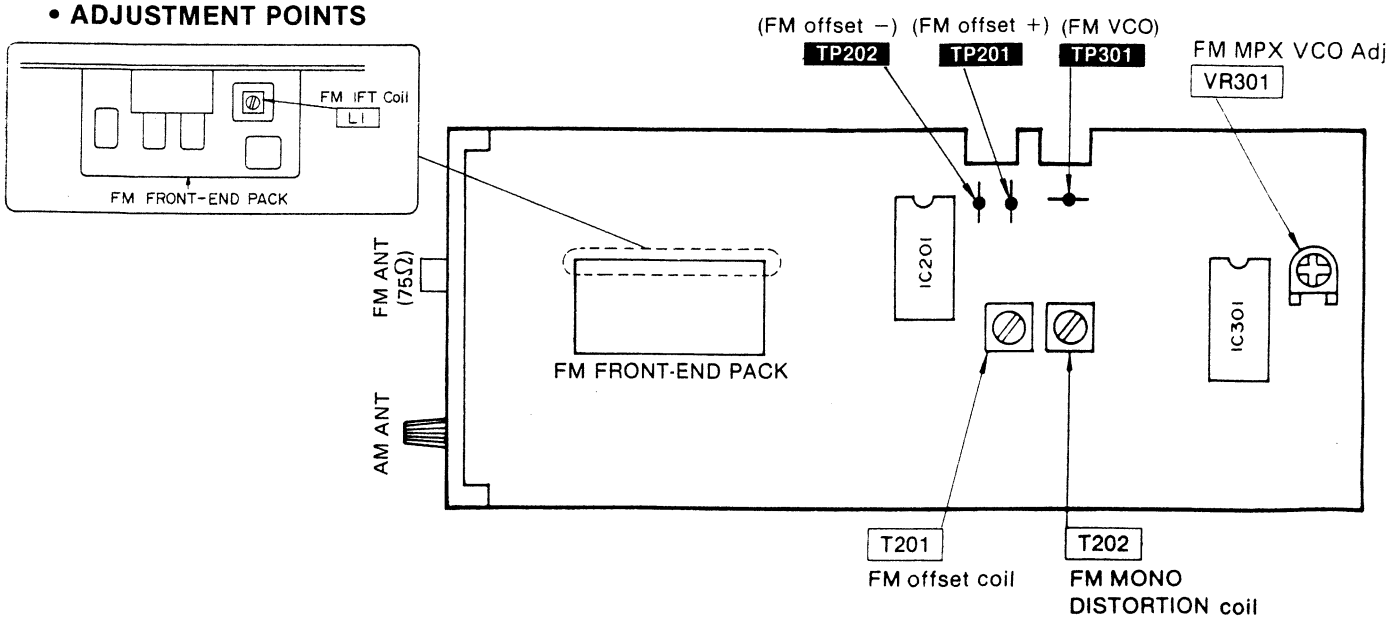
3. Insert a screwdriver at the root of the cooling fan. Force it out of the motor shaft.
4. Remove the motor cover by used ⊖ screwdriver.
5. Remove the motor from the fan casing.
6. When mounting the motor fan, align the fan casing's projection with the hole of the fan motor.



MEASUREMENTS AND ADJUSTMENTS

Note: For Z201 (AM ANT and OSC coil), Z202 (AM-IFT), Z321 (L.P.F.), L321/L322 (MPX coil) and L324 (L.P.F.), they are supplied as adjusted parts. So, do not turn the cores of the parts.
It is not necessary to adjust the AM circuit.

- **ADJUSTMENT POINTS**



• FM ADJUSTMENT

Control positions and equipment used

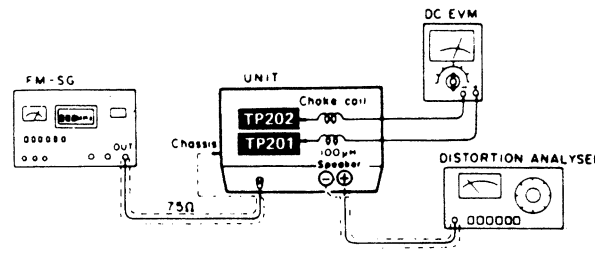
- FM signal generator (FM-SG).
- Distortion analyser
- Oscilloscope
- DC electronic voltmeter (DC EVM)
- Frequency counter
- Choke coil (100μH)
- Resistor (100kΩ)

FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" position.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **T201** core so that voltage measured in signal mode is **0mV** (0±20mV) in **300mV** range.
5. Adjust **T202** so that the distortion factor of Lch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of Lch and Rch are nearly the same with each other to minimum.

Note:
The adjusting screwdriver used should be made of resin.

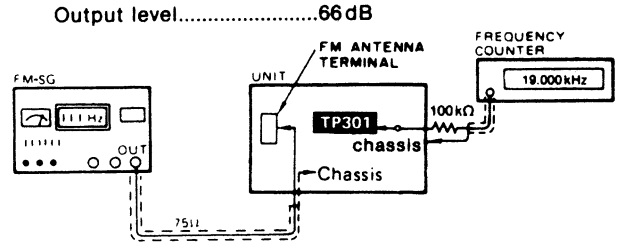
FM SIGNAL GENERATOR CONDITION
Modulation.....100%
Modulation frequency.....1kHz (MONO)
Output level.....66dB



FM MPX VCO ADJUSTMENT

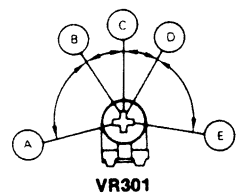
1. Test equipment connection is shown in figure.
2. Set the unit to "**FM auto**" position.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **VR301** for **19.00±0.03kHz** on frequency counter reading.

FM SIGNAL GENERATOR CONDITION
Modulation.....0%
(non-modulation)
Output level.....66dB



★USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR301** until stereo indicator lights up. Cement arm of **VR301** as shown in figure.



VR301

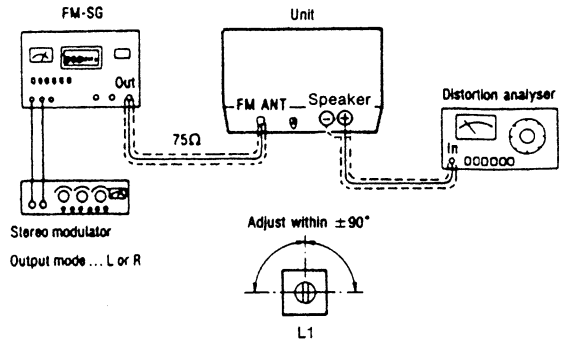
Ⓐ – Ⓑ Ⓓ – Ⓔ : Stereo OFF position
Ⓑ – Ⓓ : Stereo ON position (indicator lighting)
Ⓒ : Adjust point of Pilot circuit

FM IFT (FM STEREO DISTORTION) ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **L1** so that the distortion factor of L-CH is minimized.
5. Make sure that the distortion factors of L-CH and R-CH are nearly the same with each other to minimum.

Notes:
1. The adjusting screwdriver used should be made of resin.
2. **L1** should be rotated no more 1/4 turn (90 deg.) on either side.

FM SIGNAL GENERATOR CONDITION
Modulation.....Stereo "L" mode or "R" mode 100%
Modulation frequency.....1kHz (Pilot 19kHz)
Output level.....66dB



■ TERMINAL FUNCTION OF IC

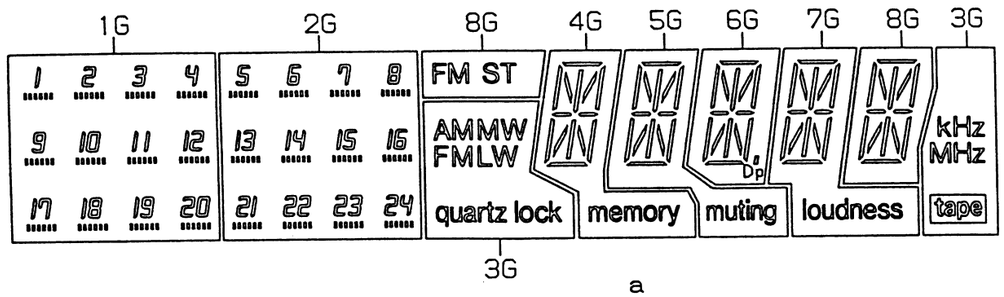
• IC901 (LC6554H4097): Microcomputer

Pin No.	Mark	I/O Division	Function
1	S13	O	Segment signal output
2 ∫ 5	PA0 ∫ PA3	I	Key return signal input
6 ∫ 8	PB0 ∫ PB2	I	Key return signal input
9	STAND BY	I	Power supply terminal
10	OFF	I	Power ON/OFF det. terminal (Not used, open)
11	STEREO	I	Stereo signal det. terminal
12	SD	I	Received signal det. terminal
13	DP	I/O	Cassette deck control terminal
14	RELAY	O	Relay control output
15	DECK	I	Cassette deck control terminal (Not used, connected to GND)
16	OPT1 (IN)	——	Not used, connected to GND
17	OPT1 (OUT)		
18	MONO	O	FM AUTO/MONO select signal output
19	RFM	O	Muting control output for tuner circuit
20	AT	O	Muting control output for amplifier circuit
21	AFM	O	Muting control output for amplifier circuit
22	TEST	——	Not used, connected to GND
23	Vss	——	Ground terminal
24	OSC1	I	Oscillator terminal
25	OSC2	O	
26	RES	I	Reset signal input
27	DATA (PF0)	O	Serial data output
28	CL (PF1)	O	Clock signal terminal for serial data
29	CE (PF2)	I/O	Chip enable terminal
30	INT	I	Remote control input
31	L	——	Not used, connected to GND
32	L	——	Not used, connected to GND

Pin No.	Mark	I/O Division	Function
33	ST	O	Level shift control output
34	L	——	Not used, connected to GND
35	V		
36	TUNING 0	O	LED drive control signal for rotary tuning (Not used, connected to GND)
37	TUNING 1		
38	LOUDNESS	O	Loudness ON/OFF signal output
39	R	O	Volume motor drive output
40	F		
41	A	O	Rotary tuning control signal output (Not used, connected to GND)
42	B		
43	Vp	I	Power supply terminal (negative voltage)
44 ∫ 55	S1 ∫ S12	O	Segment signal output
56	VDD	I	Power supply terminal (positive voltage)
57 ∫ 64	D1 ∫ D8	O	Digit signal and key scan signal output

■ INTERNAL CONNECTION OF FL

• Grid assignment diagram



• Pin connection

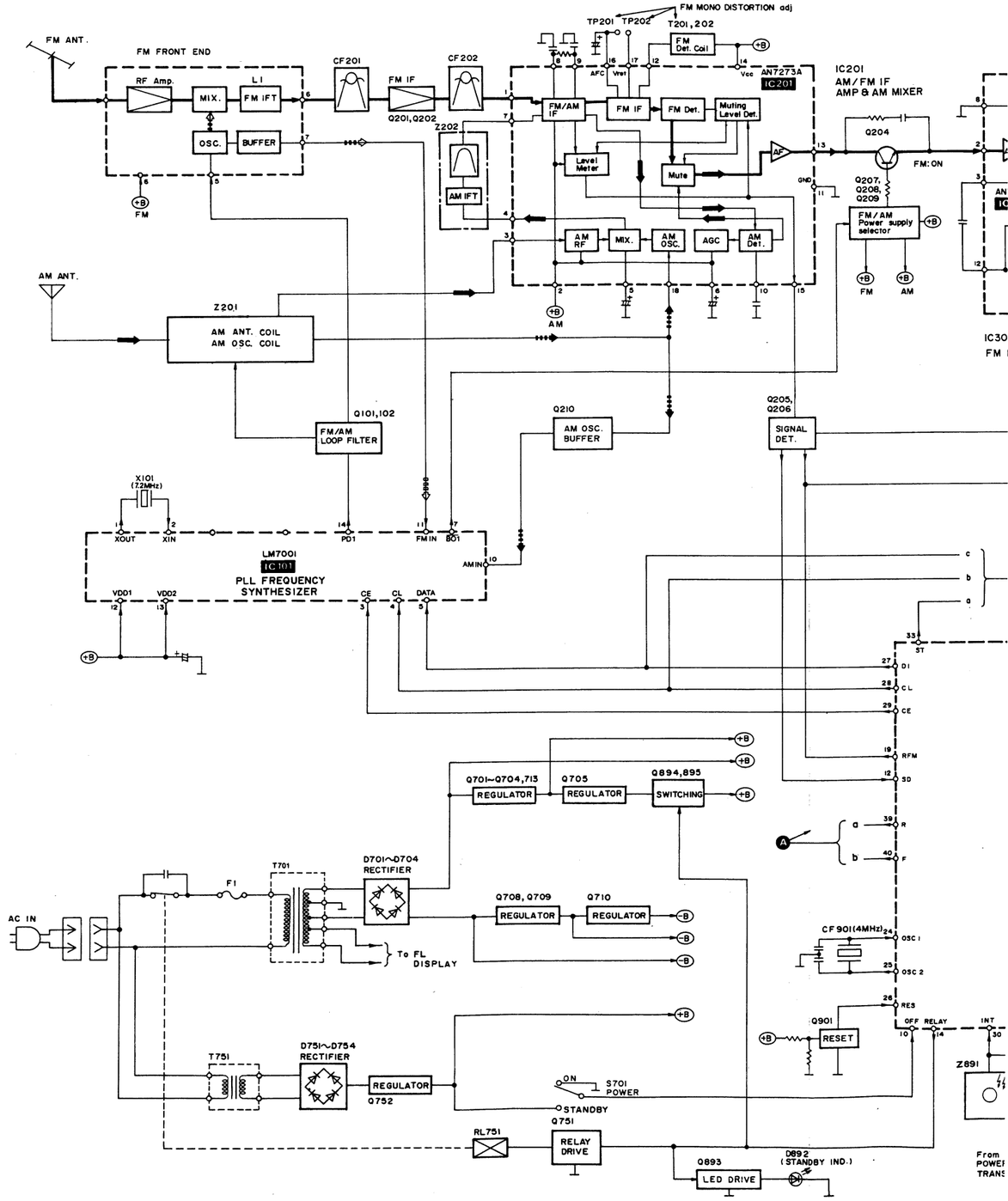
39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
NP	F2	NP	NP	NP	k	d	ℓ	c	e	g	b	f	i	h	j	a	NP	NP	NP	NP	NP	NP	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	m	NP	NP	NP	F1	NP

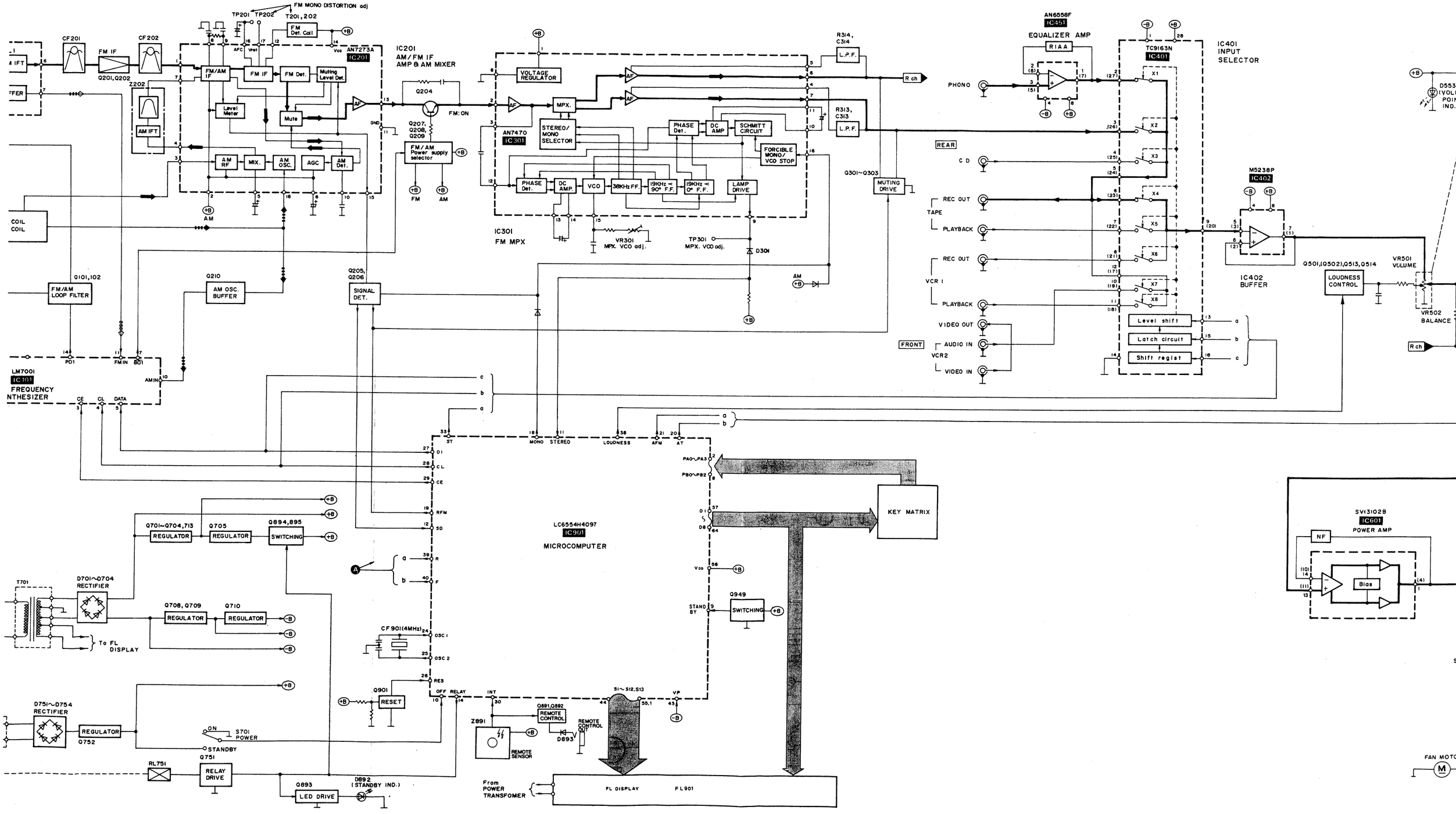
Note 1.) NP : No pin.
2.) 1G~8G : Grid
3.) F1,F2 : Filament

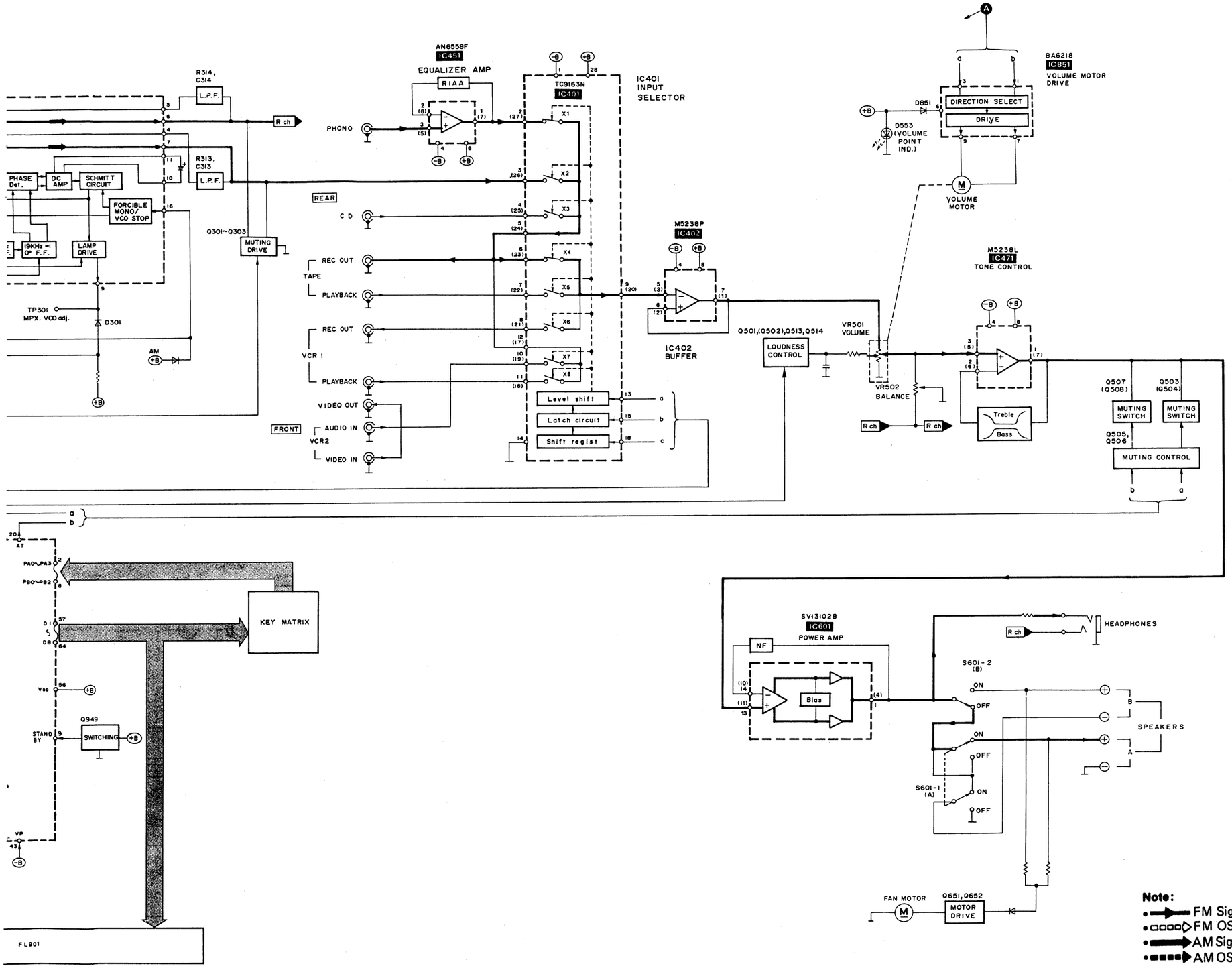
• Anode connecton table

	1G	2G	3G	4G	5G	6G	7G	8G
a	(1)	(5)	KHz	a	a	a	a	a
b	(10)	(14)	LW	b	b	b	b	b
c	(17)	(21)	quartz lock	c	c	c	c	c
d	(19)	(23)	-	d	d	d	d	d
e	(12)	(16)	tape	e	e	e	e	e
f	(9)	(13)	FM	f	f	f	f	f
g	(11)	(15)	-	g	g	g	g	g
h	(3)	(7)	AM	h	h	h	h	h
i	(4)	(8)	MW	i	i	i	i	i
j	(2)	(6)	MHz	j	j	j	j	j
k	(20)	(24)	-	k	k	k	k	k
ℓ	(18)	(22)	-	ℓ	ℓ	ℓ	ℓ	ℓ
m	1~4 9~12 17~20	5~8 13~16 21~24	-	memory	muting	D.P	loudness	FM ST

■ BLOCK DIAGRAM




FM MONO DISTORTION adj
TP201
TP202
T201, 202
FM Det. Coil
CF201
CF202
FM IF
Q201, Q202
Z202
AM IFT
AN7273A
IC201
IC201
AM/FM IF
AMP & AM MIXER
FM/AM IF
FM IF
FM Det.
Muting Level Det.
Level Meter
Mute
AM RF
MIX.
AM OSC.
AGC
AM Det.
Q204
FM:ON
Q207, Q208, Q209
FM/AM Power supply selector
FM
AM
AN7470
IC301
VOLTAGE REGULATOR
MPX.
STEREO/ MONO SELECTOR
PHASE Det.
DC AMP
VCO
38KHz FF.
19KHz = 90° F.F.
19KHz = 0° F.F.
LAMP DRIVE
SCHMITT CIRCUIT
FORCIBLE MONO/ VCO STOP
IC301
FM MPX
VR301
MPX. VCO adj.
TP301
MPX. VCO adj.
D301
R314, C314
L.P.F.
R313, C313
L.P.F.
R ch
Q301~Q303
MUTING DRIVE
AM
AN6558F
IC451
EQUALIZER AMP
RIAA
TC9163N
IC401
IC401
INPUT SELECTOR
PHONO
REAR
C D
TAPE
REC OUT
PLAYBACK
VCR 1
REC OUT
PLAYBACK
FRONT
VCR2
VIDEO OUT
AUDIO IN
VIDEO IN
X1
X2
X3
X4
X5
X6
X7
X8
Level shift
Latch circuit
Shift regist
M5238P
IC402
IC402
BUFFER
Q501,(Q502),Q513, Q514
LOUDNESS CONTROL
VR501
VOLUME
VR502
BALANCE
R ch
D851
D553
(VOLUME POINT IND.)
Q101, 102
FM/AM LOOP FILTER
Q210
AM OSC. BUFFER
Q205, Q206
SIGNAL DET.
LM7001
IC101
FREQUENCY NTHESIZER
CE
CL
DATA
PD1
FMIN
BO1
AMIN
LC6554H4097
IC901
MICROCOMPUTER
ST
MONO
STEREO
LOUDNESS
AFM
AT
DI
CL
CE
RFM
SD
R
F
OSC 1
OSC 2
RES
OFF
RELAY
INT
VP
PA0~PA3
PB0~PB2
KEY MATRIX
DI
DO
Vdd
STAND BY
Q949
SWITCHING
S1~S12, S13
Q891, Q892
REMOTE CONTROL
REMOTE CONTROL OUT
D893
Z891
REMOTE SENSOR
CF901(4MHz)
Q901
RESET
Q701~Q704, 713
REGULATOR
Q705
REGULATOR
Q894, 895
SWITCHING
T701
D701~D704
RECTIFIER
Q708, Q709
REGULATOR
Q710
REGULATOR
To FL DISPLAY
D751~D754
RECTIFIER
REGULATOR
Q752
ON
S701
POWER
STANDBY
RL751
Q751
RELAY DRIVE
Q893
LED DRIVE
D892
(STANDBY IND.)
From POWER TRANSFOMER
FL DISPLAY
FL901
SV131028
IC601
POWER AMP
NF
Bias
S601-1 (A)
FAN MOTOR

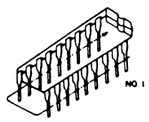


Note:

- FM Signal
- FM OSC
- AM Signal
- AM OSC

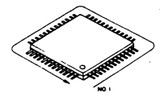
* ( ) indicates Pin No. of right channel.

■ TERMINAL GUIDE OF IC'S, TRANSISTERS AND DIODES

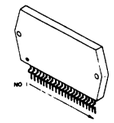


M5238P	8 PIN	AN7470	16 PIN
AN6558F	8 PIN	AN7273A	18 PIN
LM7001	8 PIN	TC9163N	28 PIN

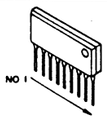
LC6554H4097 — 64 PIN

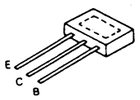


SVI3102B — 14 PIN



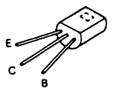
BA6218 — 9 PIN
M5238L — 8 PIN



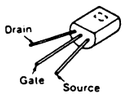


2SA933SQRSTA
2SC2785FETA
2SC2787LTA
2SD1450QRSTA
2SC3327ABTP
2SC3311AQSTA
2SA1309AQSTA

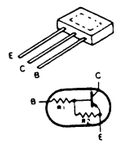
2SC1740SQSTA
2SC3940AQSTA



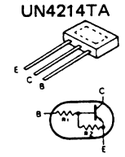
2SJ40CDTA



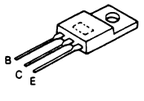
UN4113TA



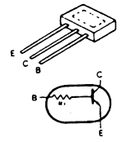
UN4211TA
UN4214TA



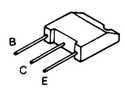
2SB1185DEF
2SD1761DEF



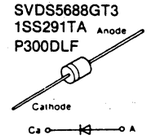
UN4215TA



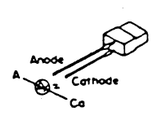
2SB1240PRTV6

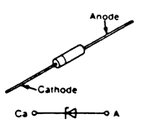


MA165TA
MA29WATA
SVDS5688GT3
1SS291TA
P300DLF



LN846RP-LS





MA4051MTA
MA4062MTA
MA4150MTA
MA4068MTA
MA4110MTA
MA4270MTA

■ SCHEMATIC DIAGRAM

(Parts list on pages 37~41.)

(This schematic diagram may be modified at any time with the development of new technology.)

Note 1:

- **S601-1, S601-2** : Speaker selectors switch.
  S601-1: A S601-2: B
- **S701** : Power "**Standby ⏻ /on**" switch.
- **S901 ~ S910** : Preset-tuning (1-0) switches.
  [S901 : CH1, S902 : CH2, S903 : CH3,
  S904 : CH4, S905 : CH5, S906 : CH6,
  S907 : CH7, S908 : CH8, S909 : CH9,
  S910 : CH0]
- **S911** : Memory scan/group-search switch.
- **S912** : FM mode selector.
- **S913,S914** : Band selectors.
  S913 : FM, S914 : AM
- **S915, S916** : Tuning switches.
  S915 : down, S916: up
- **S917** : Memory switch.
- **S918** : Loudness switch.
- **S919 ~ S926** : Group registration switches.
  [S919 : start, S920 : file 1, S921 : file 2
  S922 : file 3, S923 : file 4, S924 : file 5
  S925 : other, S926 : end]
- **S927 ~ S931** : Input selector switches.
  [S927 : phono, S928 : tuner, S929 : CD,
  S930 :VCR 1, S931 : VCR 2]
- **S932** : Tape-monitor switch.

- Signal line
  - ▭▭▭▷ : FM OSC
  - ▬▬▬▶ : AM OSC
  - ▒▒▒▒ : Phono signal
  - ——— : Positive voltage lines
  - - - - - - : Negative voltage lines
  - ⇨ : FM signal
  - ➡ : AM signal
  - ▒▒▒▶ : AF signal (Lch)
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.
- All voltage values shown in circuitry are DC voltage in FM signal (Stereo signal) reception mode.
- Figures in ( ) stand for DC-voltage in AM signal reception mode.

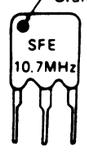
* **Caution!**
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with alminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

Note2:

- **Use of ceramic filters in pairs**

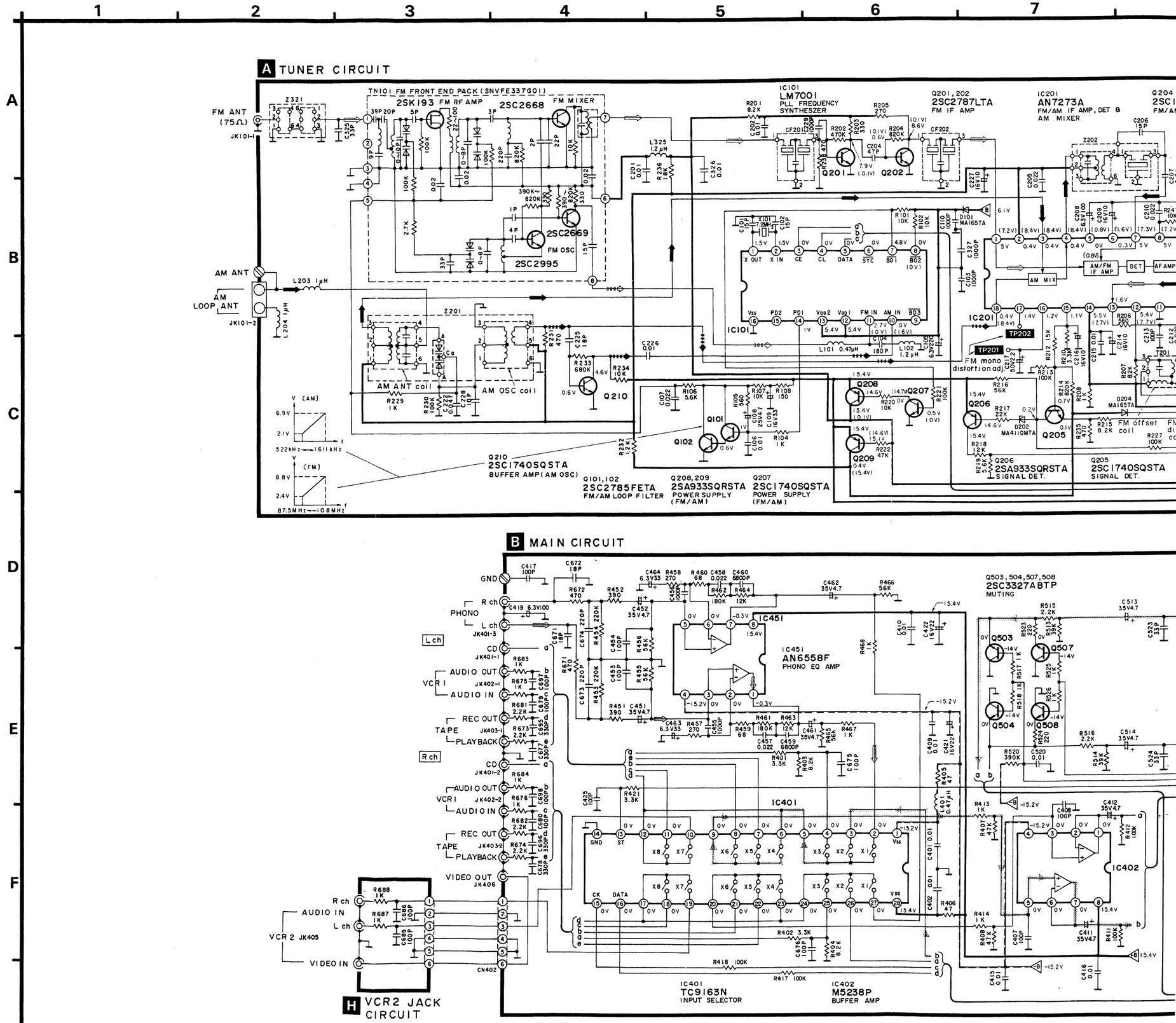
The ceramic filters (CF201, CF202) for FM-IF circuit are available in three ranks. For this circuit, be sure to use the ceramics of the same rank in a pair.
At repairing and replacement, pay close attention to the diodes (D914, D915) for use as different diodes must be used depending on each rank of the ceramic filters.

Color marking (Blue, Red or Orange)

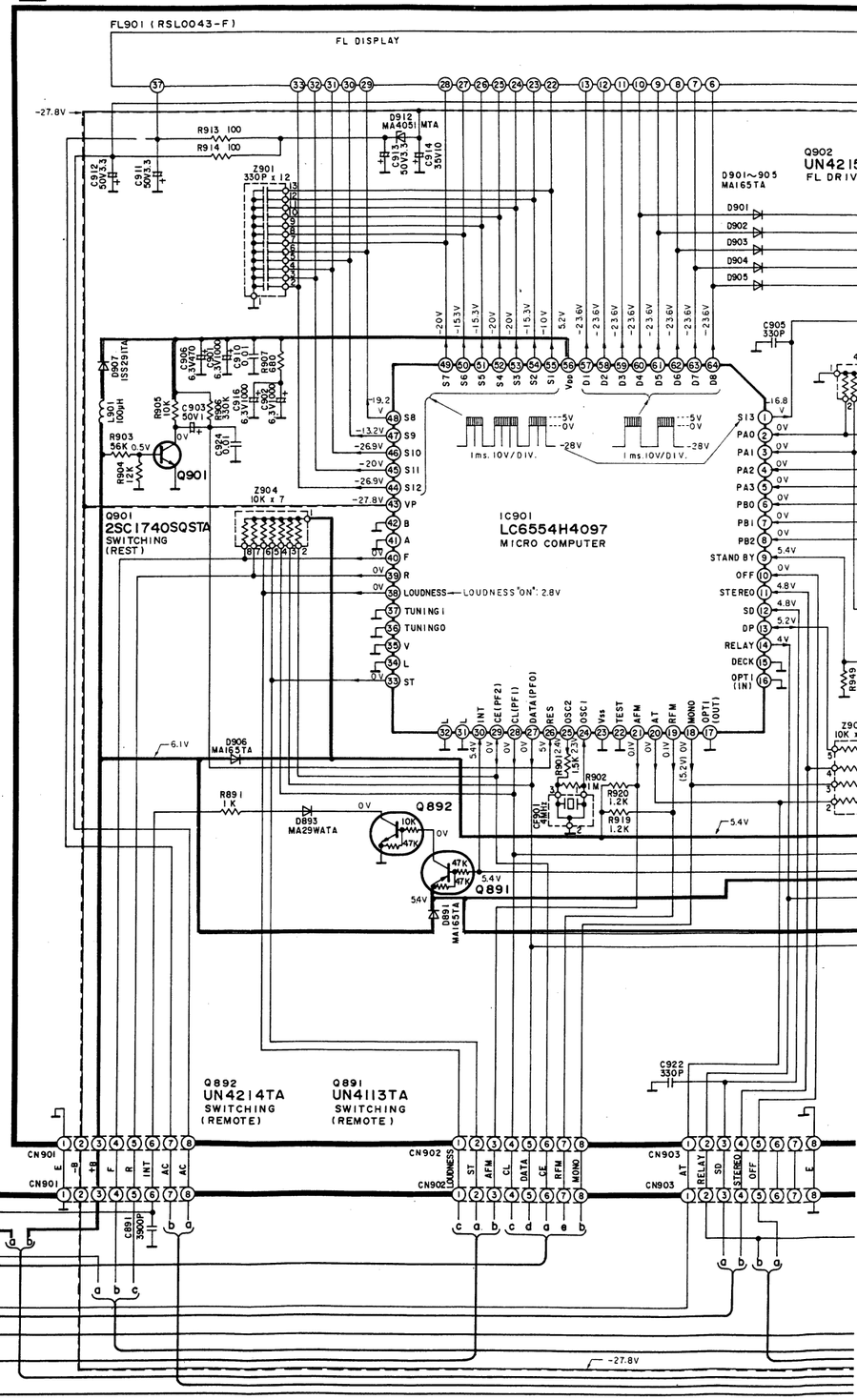


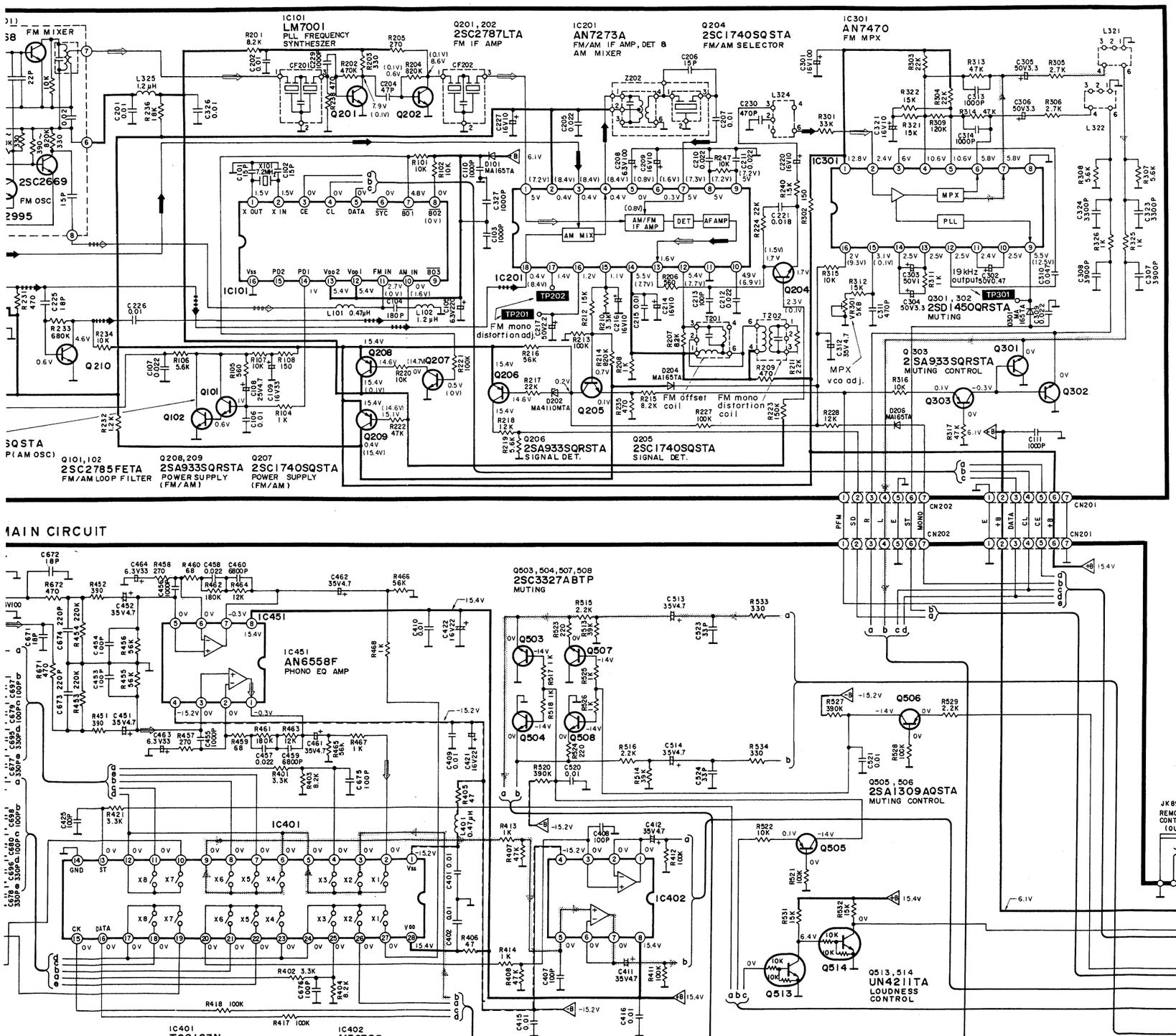
RANK (Color)	D914	D915	CENTER FREQUENCY
Blue	○	X	10.675MHz
Red	○	○	10.700MHz
Orange	X	○	10.725MHz

Note: ○ mark: Diode is used.
X mark: Diode is not used.



C FL DRIVE CIRCUIT





MAIN CIRCUIT

10 11 12 13 14 15 16 17 18 19

C FL DRIVE CIRCUIT

FL901 (RSL0043-F)
FL DISPLAY
-27.8V
R913 100
R914 100
C912 50V3.3
C911 50V3.3
Z901 330P x 12
D912 MA4051 MTA
C913 50V3.3
C914 35V10
R916 100K
C915 35V100
Q902 UN4215TA FL DRIVE
10K
4.6V
-16.6V
C917 6.3V100
D921 MA165TA
D901~905 MA165TA
D901
D902
D903
D904
D905
-20V -15.3V -15.3V -20V -20V -15.3V -10V 5.2V -23.6V -23.6V -23.6V -23.6V -23.6V -23.6V
C905 330P
Z902 47K x 7
D908~911 MA165TA
D908
D909
D910
D911
D907 1S2691TA
C906 6.3V100
C907 6.3V100
C910 0.047
R907 330K
C902 6.3V0.47
C901 100μH
R905 1K
C903 50V1
C918 6.3V0.68
R903 56K 0.5V
R904 12K
C924 0.01
Q901
0V
Z904 10K x 7
Q901 2SC1740SQSTA SWITCHING (REST)
IC901 LC6554H4097 MICRO COMPUTER
S8
S9
S10
S11
S12
VP
B
A
F
R
LOUDNESS — LOUDNESS "ON": 2.8V
TUNING I
TUNING O
V
L
ST
S13
PA0
PA1
PA2
PA3
PB0
PB1
PB2
STAND BY
OFF
STEREO
SD
DP
RELAY
DECK
OPT1 (IN)
D919 MA165TA
D914 MA165TA
+IF
D915 MA165TA
Q949 2SA933SQRSTA POWER SUPPLY
C949
R949 4.7K
R947 10K
R946 2.2K
Z903 10K x 4
R902 1M
R920 1.2K
R919 1.2K
C901 4MHz
R901 1.5K
R891 1K
D906 MA165TA
D893 MA29WATA
Q892
Q891
D891 MA165TA
R915 330
R910 1.2K
R948 10K
Q893 2SA933SQRSTA LED DRIVE
C922 330P
JK891 REMOTE CONTROL (OUT)
Q892 UN4214TA SWITCHING (REMOTE)
Q891 UN4113TA SWITCHING (REMOTE)
CN901
CN902
CN903
CN907
CN907A
CN906
CN906A
CN908
CN908A
CN201
D892 LN846RP-LS (STANDBY)
C891 3900P
6.1V
5.4V
15.4V

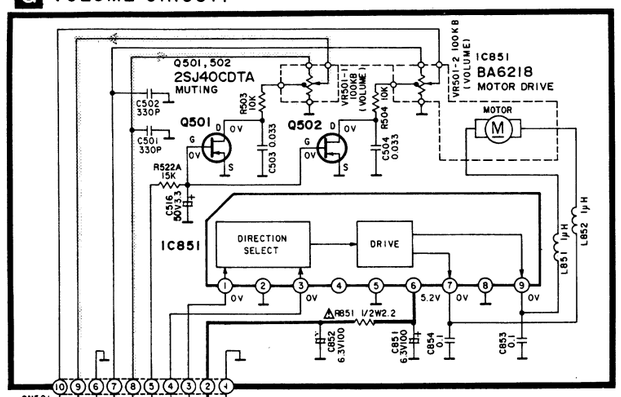
D OPERATION CIRCUIT

R950 5.6K
R951 5.6K
R953 5.6K
R954 5.6K
R952 5.6K
S915 (TUNING DOWN)
S916 (TUNING UP)
S926 (END)
S919 (START)
S923 (FILE4)
S924 (FILE5)
S925 (OTHER)
S913 (FM)
S914 (AM)
S912 (FM MODE)
S920 (FILE1)
S921 (FILE2)
S922 (FILE3)
S909 (9)
S910 (0)
S917 (MEMORY)
S911 (M.SCAN)
S918 (LOUDNESS)
S905 (5)
S906 (6)
S907 (7)
S908 (8)
S932 (TAPE MONITOR)
S930 (VCR1)
S931 (VCR2)
S901 (1)
S902 (2)
S903 (3)
S904 (4)
S927 (PHONO)
S928 (TUNER)
S929 (CD)
R925 330
R924 330
R923 330

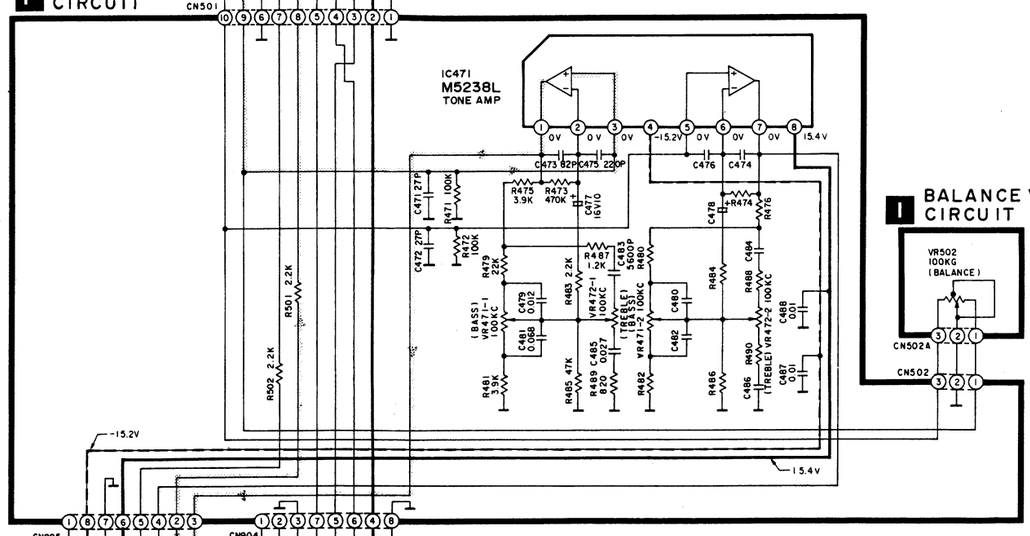
E REMOTE SENSOR CIRCUIT

Z891 AQH3029HO (REMOTE SENSOR)

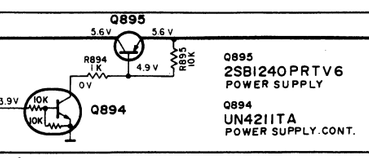
G VOLUME CIRCUIT

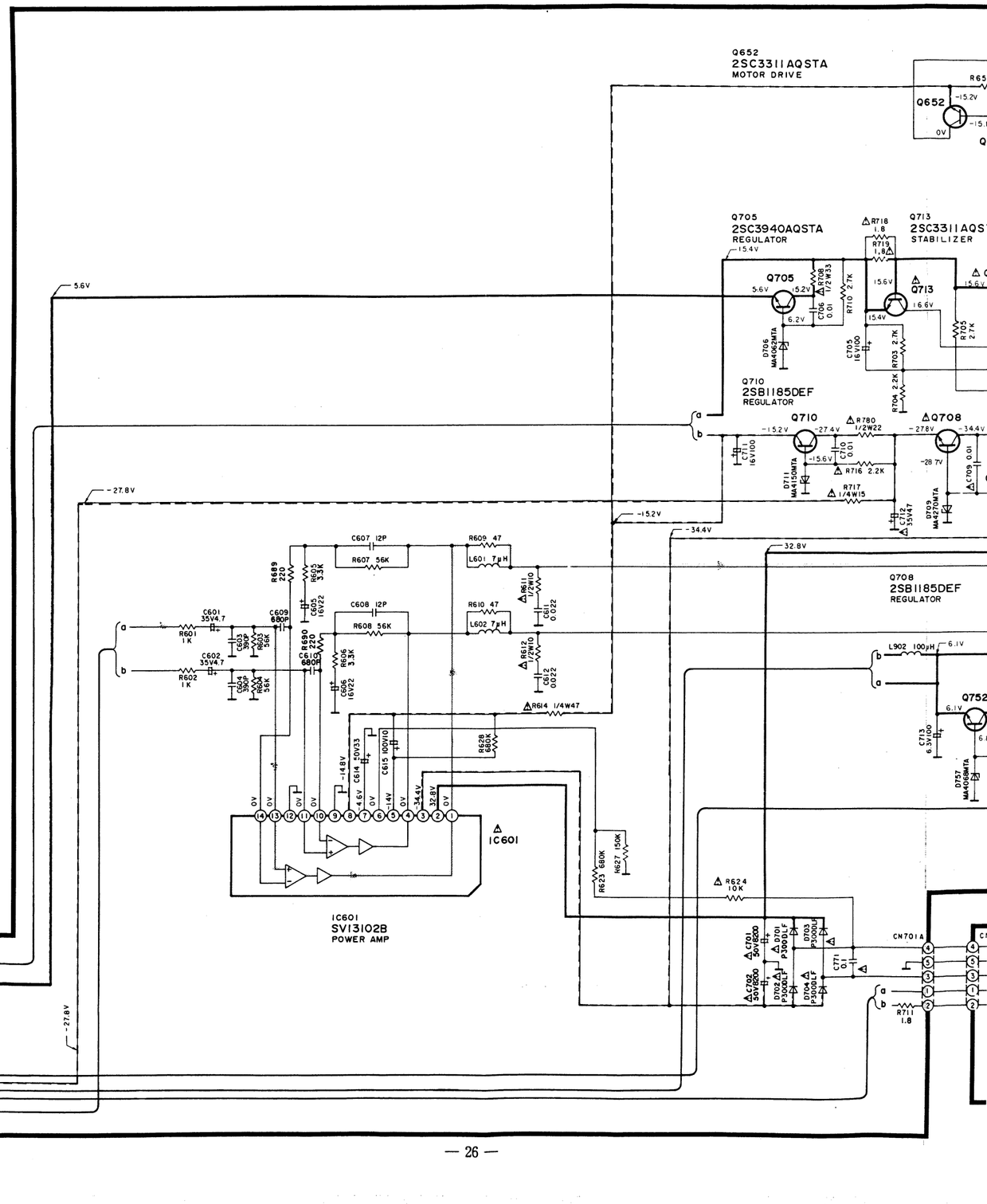


F TONE AMP CIRCUIT

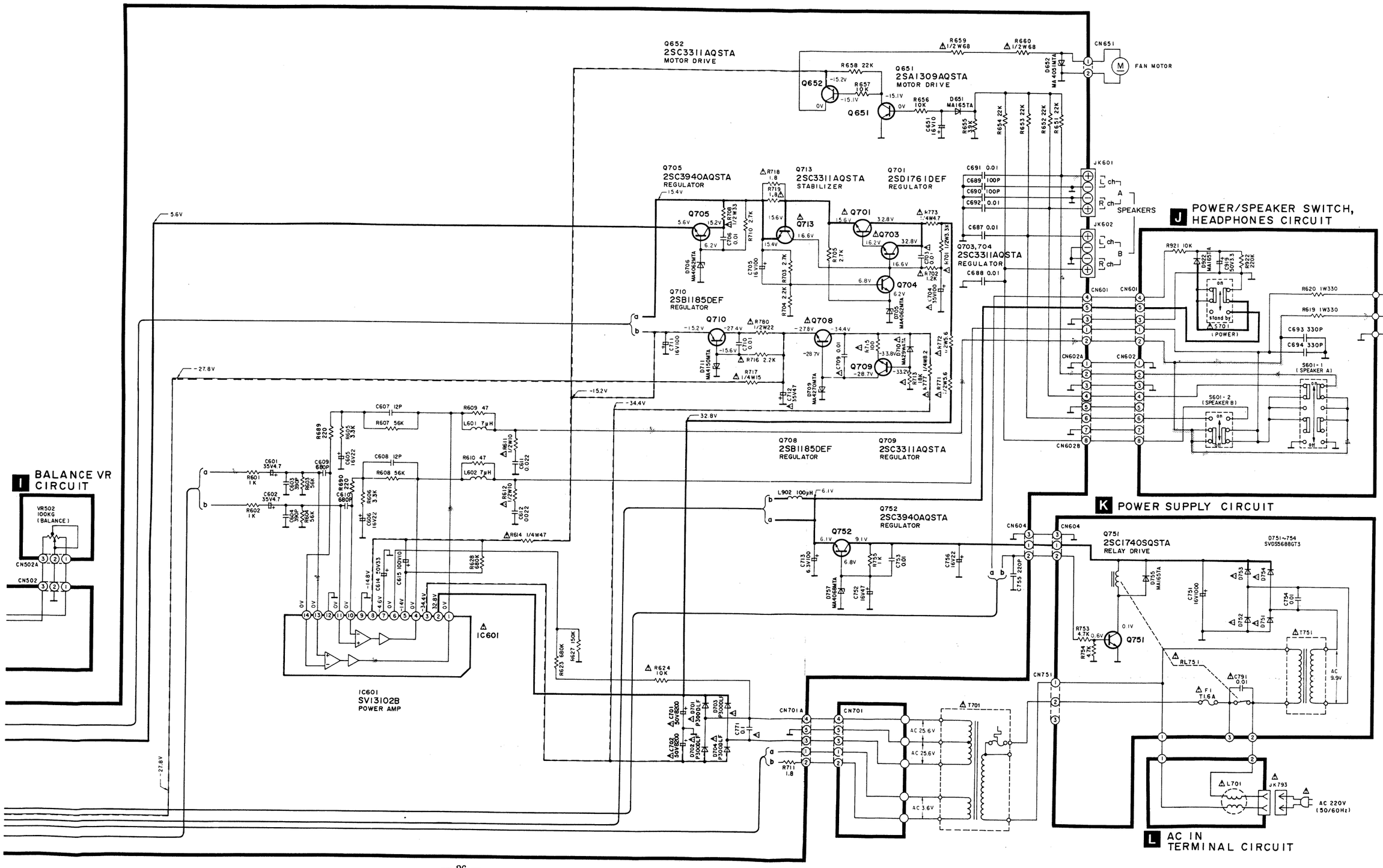


I BALANCE VR CIRCUIT





24 25 26 27 28 29 30 31 32 33



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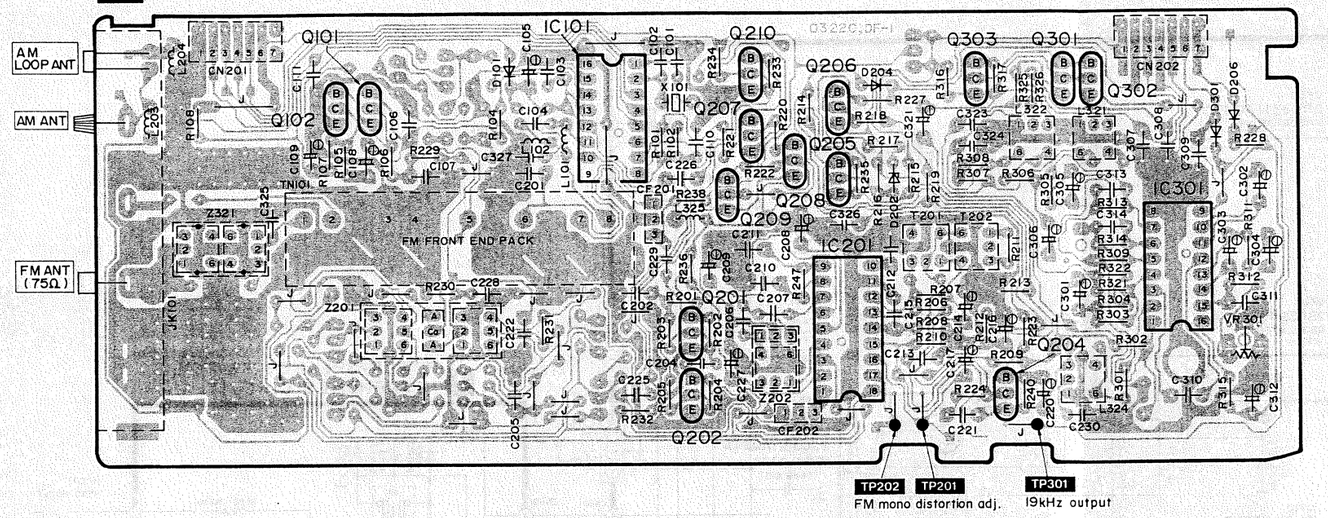
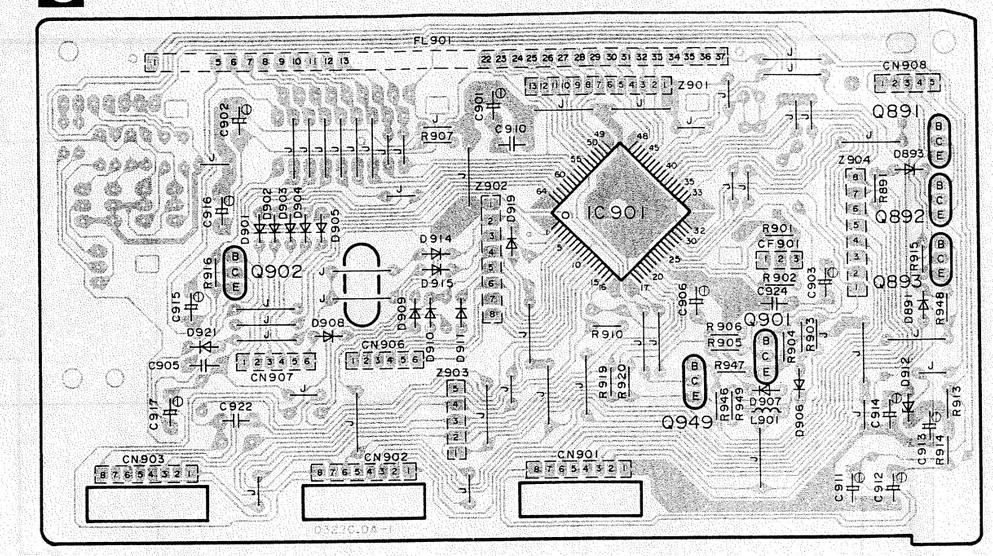
■PRINTED CIRCUIT BOARDS

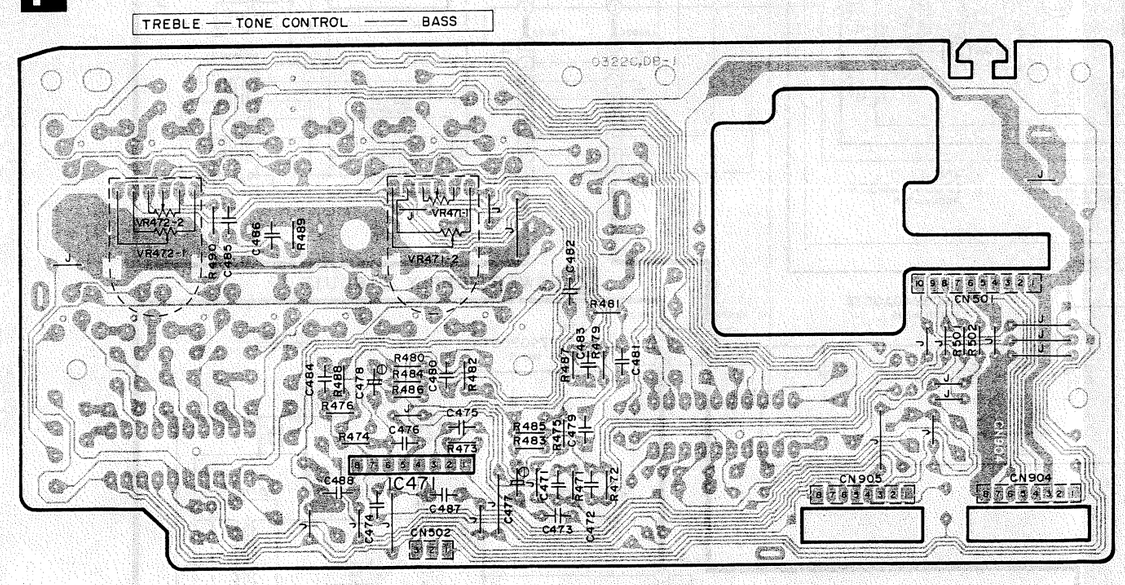
A TUNER P.C.B.



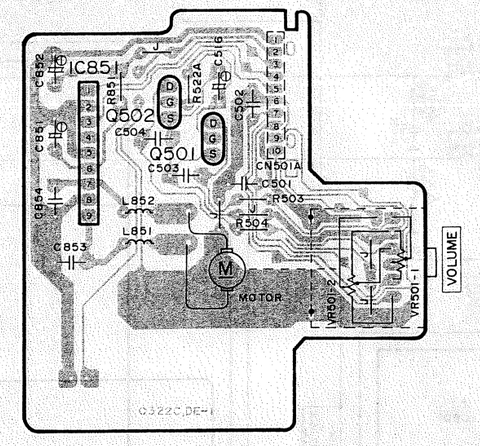
C FL DRIVE P.C.B.



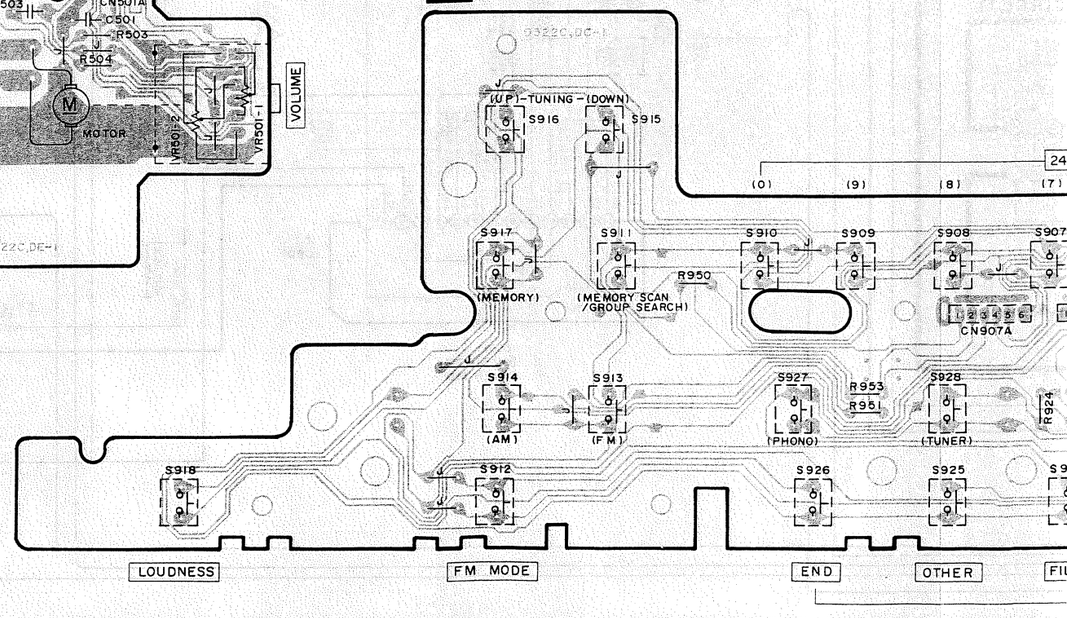
F TONE AMP P.C.B.



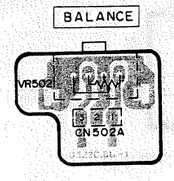
G VOLUME P.C.B.



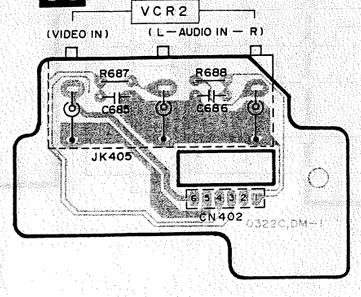
D OPERATION P.C.B.



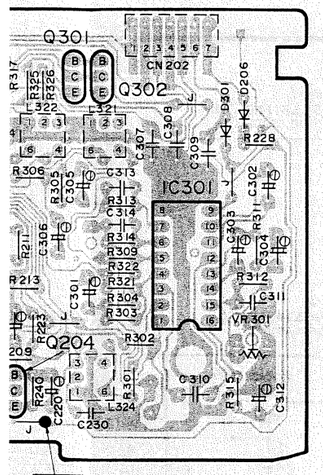
I BALANCE VR P.C.B.



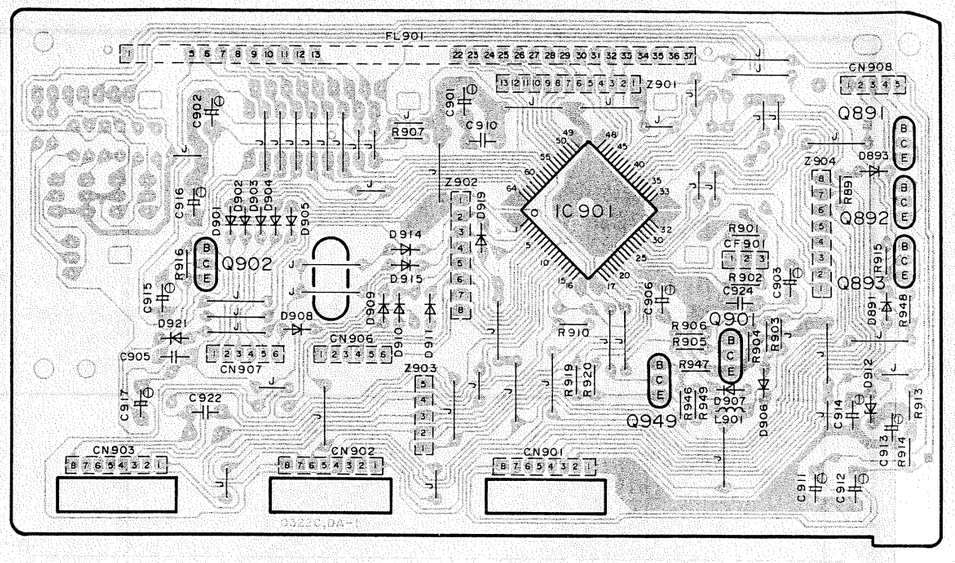
H VCR2 JACK P.C.B.



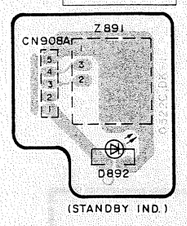
5 6 7 8 9 10 11 12 13 14



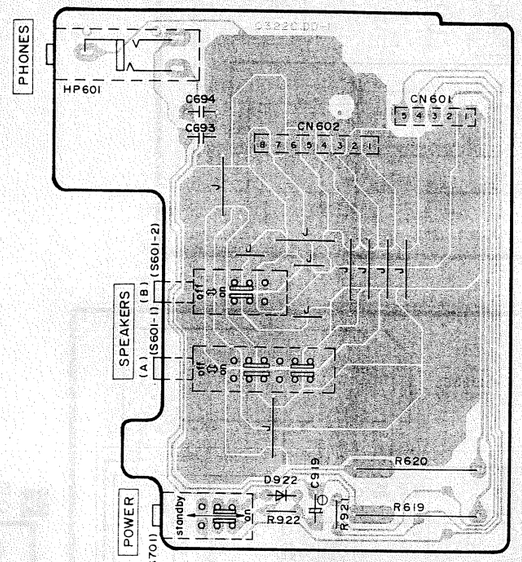
C FL DRIVE P.C.B.

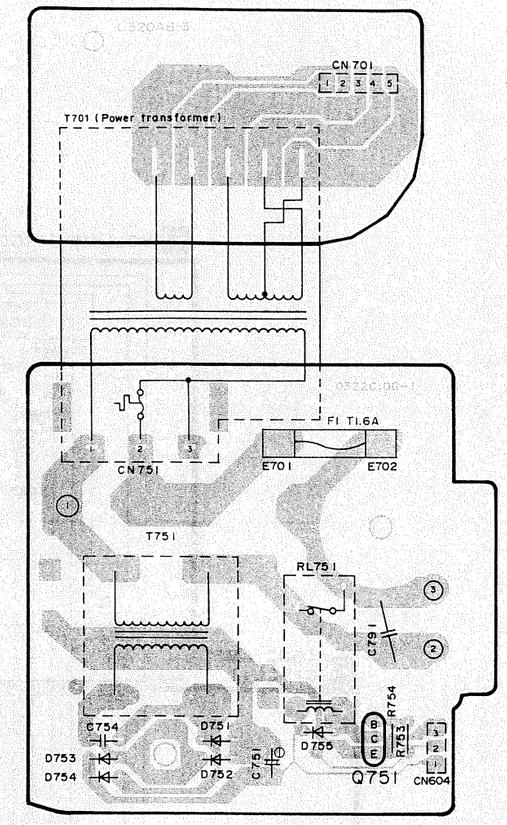


E REMOTE SENSOR P.C.B.



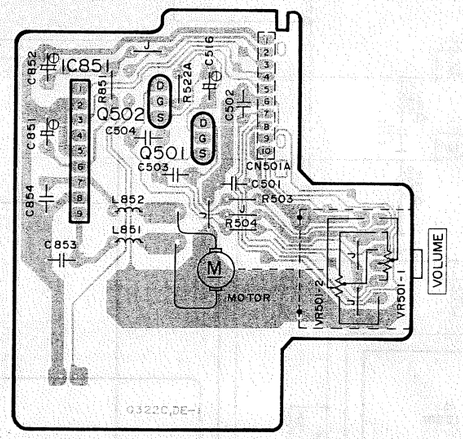
J POWER/SPEAKER SWITCH, HEDPHONES P.C.B.



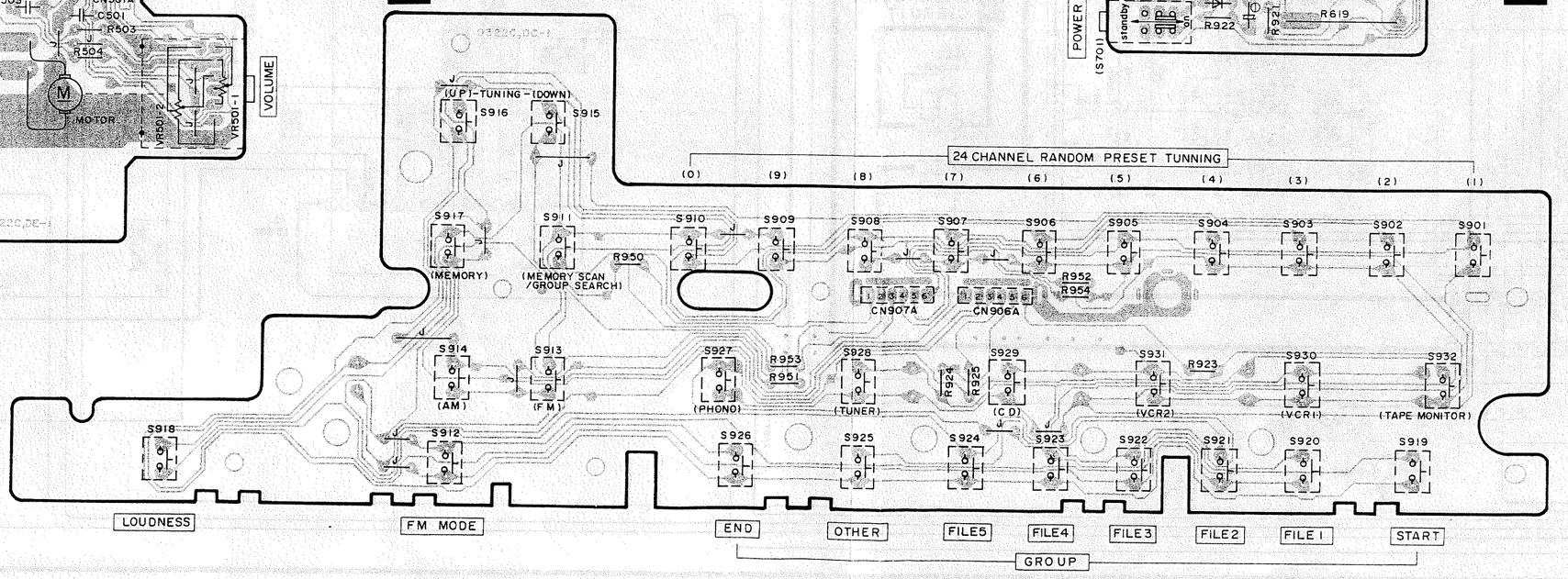


K POWER SUPPLY P.C.B.

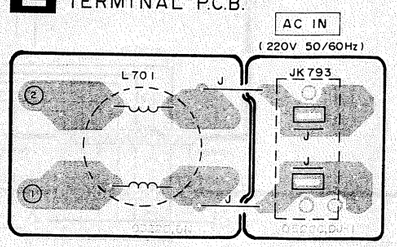
G VOLUME P.C.B.



D OPERATION P.C.B.



L AC IN TERMINAL P.C.B.

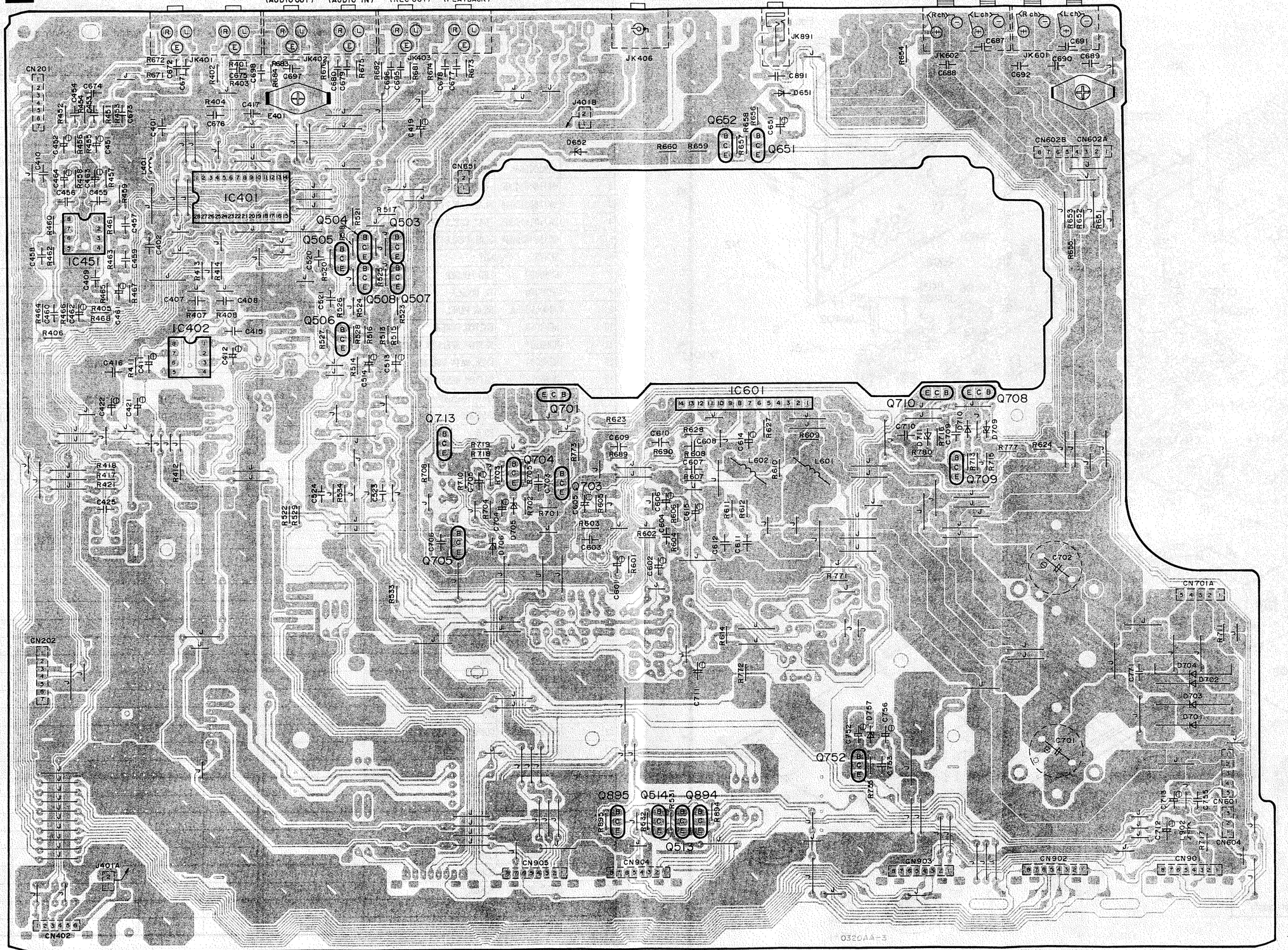


15 16 17 18 19 20 21 22 23 24

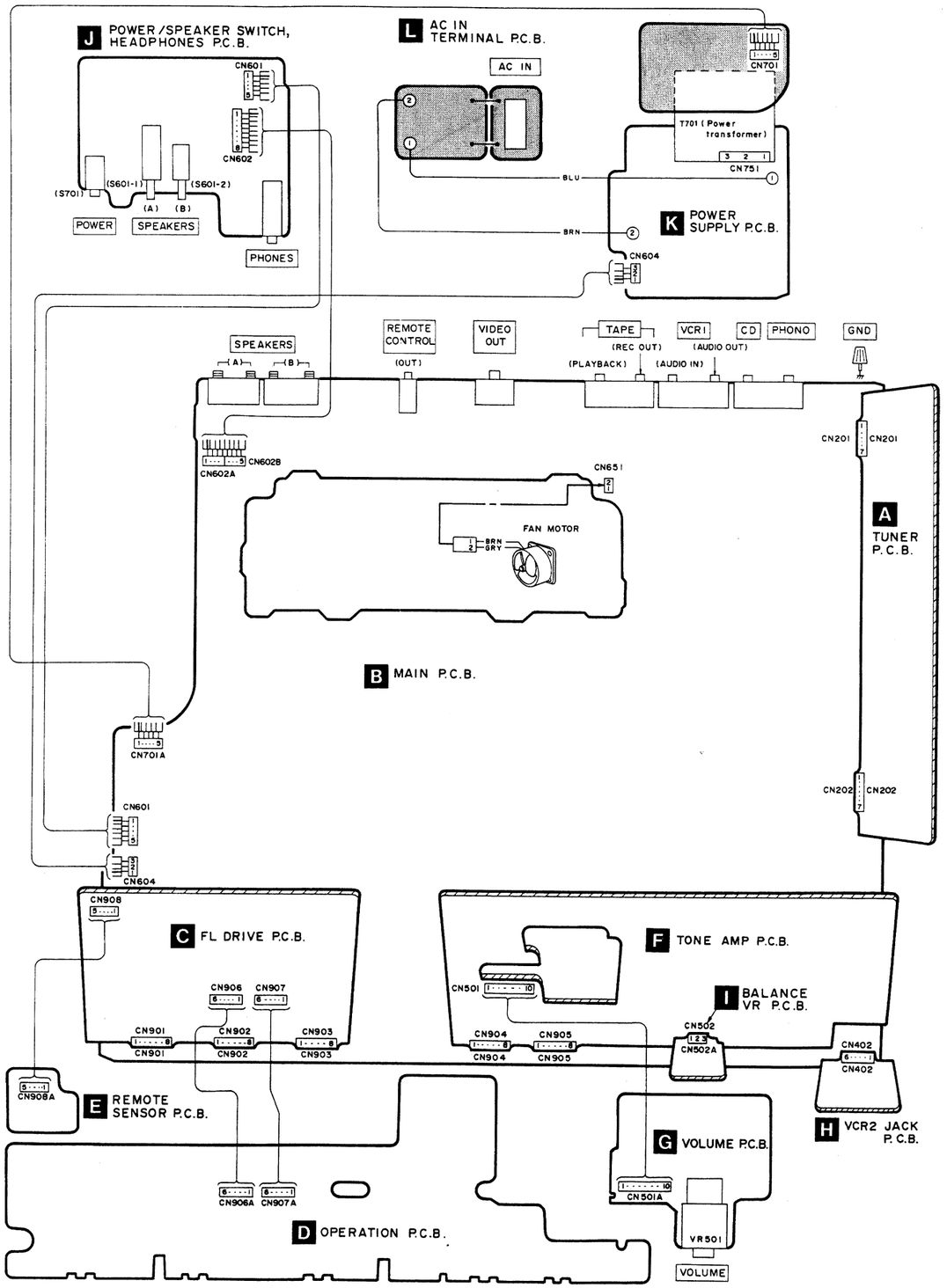
GND

B MAIN P.C.B.

PHONO CD VCR1 (AUDIO OUT) (AUDIO IN) TAPE (REC OUT) (PLAYBACK) VIDEO OUT REMOTE CONTROL (OUT) SPEAKERS (B) (A)



■ WIRING CONNECTION DIAGRAM



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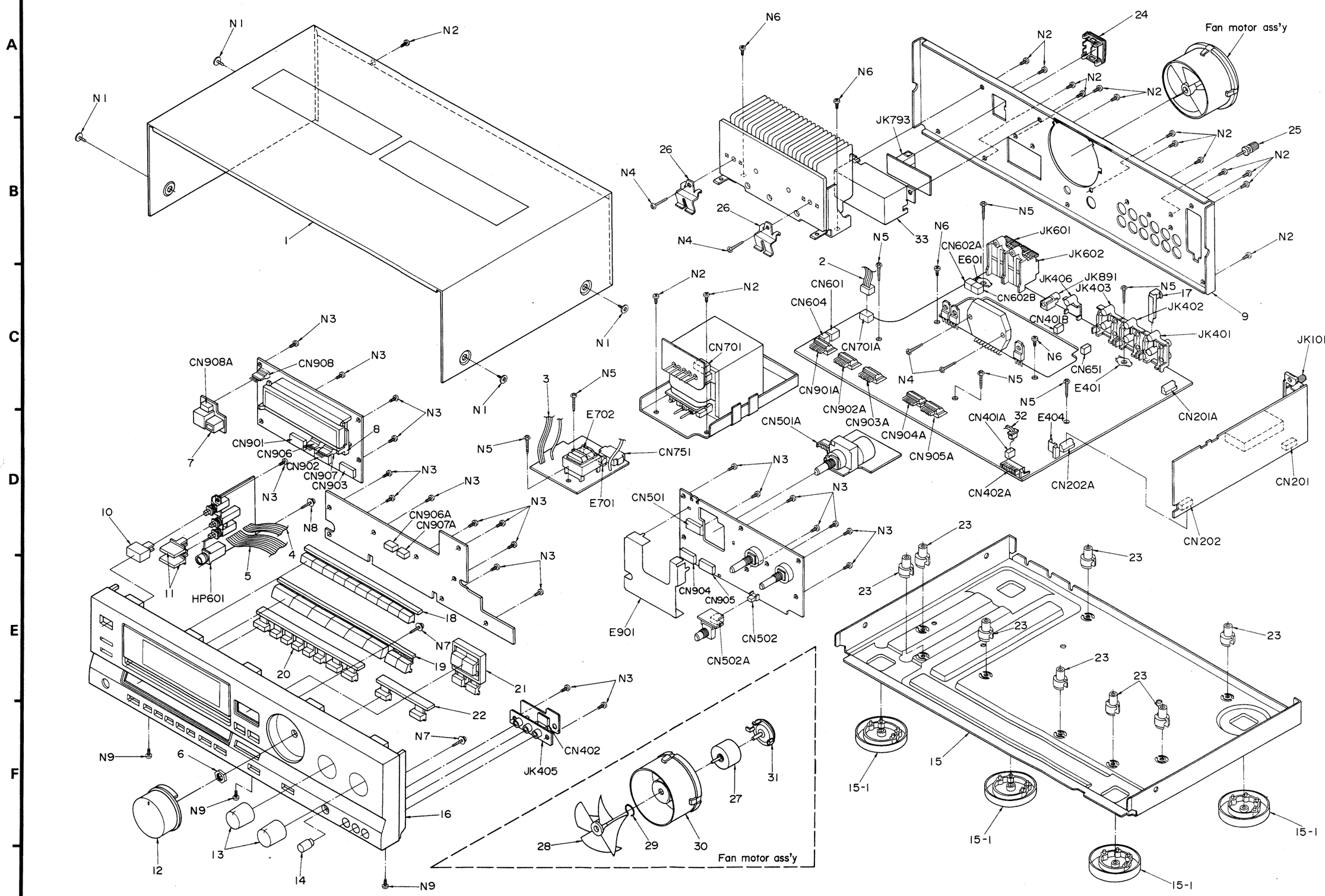
■ EXPLODED VIEW



■ REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKM0036B-K	CABINET	
2	RWJ1805140QQ	CONNECTOR ASS'Y (5P) (CN701)	
3	RWJ1803150QK	FLAT CABLE (3P) (CN604)	
4	RWJ1805150QK	FLAT CABLE (5P) (CN601)	
5	RWJ1808390QK	FLAT CABLE (8P) (CN602)	
6	XNS7S	NUT	
7	RMN0069	LED HOLDER	
8	RMN0070	FL HOLDER	
9	RGR0079G-A	REAR PANEL	
10	RGU0030	BUTTON, POWER	
11	RGU0101	BUTTON, SPEAKER SELECTOR	
12	RGW0084	KNOB, MAIN VOLUME	
13	RGW0072	BUTTON, BASS/TREBLE	
14	RGW0073	KNOB, BALANCE	
15	RFKJAGX500PP	CHASSIS ASS'Y	
15-1	RKA0009-1	FOOT	
16	RFKGAGX200EG	FRONT PANEL ASS'Y	
17	RSC0105	SHIELD PLATE	
18	RGU0344A	BUTTON, PRESET	
19	RGU0394C	BUTTON, SELECTOR	
20	RGU0346	BUTTON, GROUP	
21	RGU0347	BUTTON, UP-DOWN	
22	RGU0348A	BUTTON, MODE	
23	SHE187-2	P. C. B. SUPPORT	
24	SJS9231A	AC INLET COVER	
25	SNE2123	GND TERMINAL	
26	SUS894-1	ANGLE, TRANSISTOR	
27	MDN-4RB4MRC	MOTOR	
28	SHE222	FAN	
29	SUS271	SPRING	
30	SHE233	FAN CASE	
31	SHE234	CAP	
32	REL28H360XX	CONNECTOR ASS'Y (2P)	
33	RSC0124	SHIELD PLATE	
		SCREWS	
N1	SNE2129-3	SCREW	
N2	XTBS3+8JFZ1	SCREW	
N3	XTBS26+8J	SCREW	
N4	XTB3+16JFZ	SCREW	
N5	XTB3+20JFZ	SCREW	
N6	XTB3+8JFZ	SCREW	
N7	XTWS3+8T	SCREW	

Ref. No.	Part No.	Part Name & Description	Remarks
N8	XTWS3+10Q	SCREW	
N9	XTB3+6JFZ	SCREW	
		PACKING MATERIAL	
P1	RPG0569	PACKING CASE	
P2	RPN0328A	PAD	
P3	RPN0328B	PAD	
P4	RPN0328C	PAD	
P5	RPN0328D	PAD	
P6	SPP723	PROTECTION BAG (UNIT)	
P7	SPSD152	ACCESSORIES BOX	
P8	SPB1061	PROTECTION BAG (F. B.)	
		ACCESSORIES	
A1	RQT0637-D	INSTRUCTION MANUAL	
A2	SFDAC05E03	POWER CORD	⚠
A3	SPB1163T	AM LOOP ANTENNA	
A3-1	SMA233-1M	AM ANTENNA HOLDER	
A3-2	XTN3+10AFZ	SCREWS	
A4	SSA270M	FM ANTENNA	
A5	RQAD013	WARRANTY CARD	
A6	RQCB0169	SERVICENTER LIST	
A7	RAK-SA301E	REMOTE CONTROL TRANSMITTER	
A8	RKK0008	BATTERY COVER	

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC101	LM7001	I. C, PLL FREQ. SYNTHESIZER	
IC201	AN7273A	I. C, FM/AM IF AMP&MIXER	
IC301	SVIUPC1161C3	I. C, FM MPX	
IC401	TC9163N	I. C, INPUT SELECTOR	
IC402	M5238P-1	I. C, BUFFER AMP	
IC451	AN6558F	I. C, PHONO EQ. AMP	
IC471	M5238L	I. C, TONE CONTROL	
IC601	SVI3102B	I. C, POWER AMP	⚠
IC851	BA6218	I. C, MOTOR DRIVE	
IC901	LC6554H4097	I. C, MICROCOMPUTER	
		TRANSISTOR(S)	
Q101, 102	2SC2785FE	TRANSISTOR	
Q201, 202	2SC2787L	TRANSISTOR	
Q204, 205	2SC1740SQ	TRANSISTOR	
Q206	2SA933SQR	TRANSISTOR	
Q207	2SC1740SQ	TRANSISTOR	
Q208, 209	2SA933SQR	TRANSISTOR	
Q210	2SC1740SQ	TRANSISTOR	
Q301, 302	2SD1450QRSTA	TRANSISTOR	
Q303	2SA933SQR	TRANSISTOR	
Q501, 502	2SJ40CDTA	TRANSISTOR	
Q503, 504	2SC3327-A	TRANSISTOR	
Q505, 506	2SA1309A-R	TRANSISTOR	
Q507, 508	2SC3327-A	TRANSISTOR	
Q513, 514	UN4211	TRANSISTOR	
Q651	2SA1309A-R	TRANSISTOR	
Q652	2SC3311A-Q	TRANSISTOR	
Q701	2SD1761DEF	TRANSISTOR	⚠
Q703	2SC3311A-Q	TRANSISTOR	⚠
Q704	2SC3311A-Q	TRANSISTOR	
Q705	2SC3940AQSTA	TRANSISTOR	
Q708	2SB1185DEF	TRANSISTOR	⚠
Q709	2SC3311A-Q	TRANSISTOR	
Q710	2SB1185DEF	TRANSISTOR	
Q713	2SC3311A-Q	TRANSISTOR	⚠
Q751	2SC1740SQ	TRANSISTOR	
Q752	2SC3940AQSTA	TRANSISTOR	
Q891	UN4113TA	TRANSISTOR	
Q892	UN4214TA	TRANSISTOR	
Q893	2SA933SQR	TRANSISTOR	
Q894	UN4211	TRANSISTOR	
Q895	2SB1240PRTV6	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q901	2SC1740SQ	TRANSISTOR	
Q902	UN4215	TRANSISTOR	
Q949	2SA933SQR	TRANSISTOR	
		DIODE(S)	
D101	MA165	DIODE	
D202	MA4110MTA	DIODE	
D204	MA165	DIODE	
D206	MA165	DIODE	
D301	MA165	DIODE	
D651	MA165	DIODE	
D652	MA4051MTA	DIODE	
D701-704	P300DLF	DIODE	⚠
D705, 706	MA4062MTA	DIODE	
D709	MA4270	DIODE	
D710	MA29WA	DIODE	⚠
D711	MA4150M	DIODE	
D751-754	SVDS5688GT3	DIODE	⚠
D755	MA165	DIODE	
D757	MA4068M	DIODE	
D891	MA165	DIODE	
D892	LN846RP	DIODE	
D893	MA29WA	DIODE	
D901-906	MA165	DIODE	
D907	1SS291TA	DIODE	
D908-911	MA165	DIODE	
D912	MA4051MTA	DIODE	
D914, 915	MA165	DIODE	
D919	MA165	DIODE	
D921, 922	MA165	DIODE	
		VARIABLE RESISTOR(S)	
VR301	EVNDXAA00B53	V. R, MPX VCO ADJ.	
VR471, 472	EWC2XAF25C15	V. R, TONE CONTROL	
VR501	EUWMNYF20B15	V. R, MAIN VOLUME	
VR502	EVJ01CF01G15	V. R, BALANCE	
		COMPONENT COMBINATION(S)	
Z201	RLA2Z001-T	COIL	
Z202	SLI7Z101-T	COMPONENT COMBINATION	
Z321	SLA4Z13-Z	COMPONENT COMBINATION	
Z891	A1QH3029H0	REMOTE SENSOR	
Z901	EXFP12331MF	COMPONENT COMBINATION	
Z902	EXBF8E473J	COMPONENT COMBINATION	

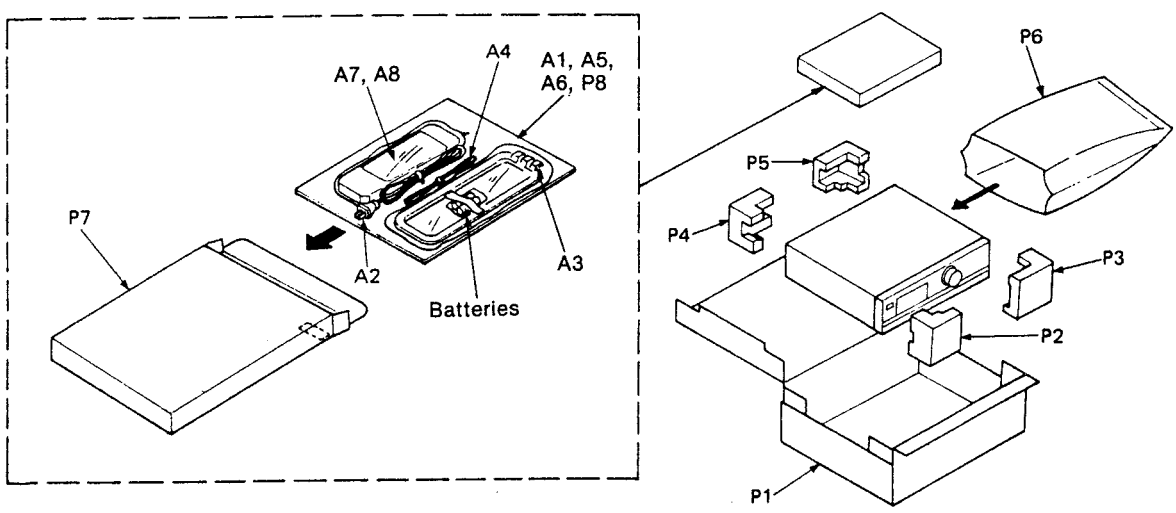
Ref. No.	Part No.	Part Name & Description	Remarks
Z903	EXBF5E103J	COMPONENT COMBINATION	
Z904	EXBF8E103J	COMPONENT COMBINATION	
		COIL(S)	
L101	RLQZPR47KT-Y	COIL	
L102	RLQZP1R2KT-Y	COIL	
L203, 204	ELEPK1R0MA	COIL	
L321, 322	RLM2B003-K	COIL	
L324	SLM1B10-M	COIL	
L325	RLQZP1R2KT-Y	COIL	
L401	RLQZPR47KT-Y	COIL	
L601, 602	SLQY07G-40	COIL	
L701	SLQZ650MH49	COIL	⚠
L851, 852	RLQZP1R0KT-Y	COIL	
L901, 902	ELEPK101KA	COIL	
		TRANSFORMER(S)	
T201	RLI4B002-Z	COIL	
T202	RLI4B003-Z	COIL	
T701	RTP1N5E005-V	POWER TRANSFORMER	⚠
T751	RTP1I5E001-V	TRANSFORMER	⚠
		FILTER(S)	
CF201	RLFKTF2M01LA	CERAMIC FILTER	(RED)
CF201	RLFKTF2M01LB	CERAMIC FILTER	(BLUE)
CF201	RLFKTF2M01LC	CERAMIC FILTER	(ORANGE)
CF202	RLFKTF2M01LA	CERAMIC FILTER	(RED)
CF202	RLFKTF2M01LB	CERAMIC FILTER	(BULE)
CF202	RLFKTF2M01LC	CERAMIC FILTER	(ORANGE)
CF901	EFOGC4004A4	CERAMIC FILTER	
		OSCILLATOR(S)	
X101	SVQ49U722-S	OSCILLATOR	
		DISPLAY TUBE	
FL901	RSL0043-F	DISPLAY TUBE	
		FUSE(S)	
F1	XBA2C16TB0	FUSE	⚠
		SWITCH(ES)	
S601	SSH2137	SW, SPEAKERS	
S701	SSH1238	SW, POWER	⚠
S901	EVQ21405R	SW, PRESET TUNING1	
S902	EVQ21405R	SW, PRESET TUNING2	

Ref. No.	Part No.	Part Name & Description	Remarks
S903	EVQ21405R	SW, PRESET TUNING3	
S904	EVQ21405R	SW, PRESET TUNING4	
S905	EVQ21405R	SW, PRESET TUNING5	
S906	EVQ21405R	SW, PRESET TUNING6	
S907	EVQ21405R	SW, PRESET TUNING7	
S908	EVQ21405R	SW, PRESET TUNING8	
S909	EVQ21405R	SW, PRESET TUNING9	
S910	EVQ21405R	SW, PRESET TUNING0	
S911	EVQ21405R	SW, MEMORY SCAN	
S912	EVQ21405R	SW, FM MODE	
S913	EVQ21405R	SW, FM	
S914	EVQ21405R	SW, AM	
S915	EVQ21405R	SW, TUNING DOWN	
S916	EVQ21405R	SW, TUNING UP	
S917	EVQ21405R	SW, MEMORY	
S918	EVQ21405R	SW, LOUDNESS	
S919	EVQ21405R	SW, START	
S920	EVQ21405R	SW, FILE 1	
S921	EVQ21405R	SW, FILE 2	
S922	EVQ21405R	SW, FILE 3	
S923	EVQ21405R	SW, FILE 4	
S924	EVQ21405R	SW, FILE 5	
S925	EVQ21405R	SW, OTHER	
S926	EVQ21405R	SW, END	
S927	EVQ21405R	SW, PHONO	
S928	EVQ21405R	SW, TUNER	
S929	EVQ21405R	SW, CD	
S930	EVQ21405R	SW, VCR1	
S931	EVQ21405R	SW, VCR2	
S932	EVQ21405R	SW, TAPE MONITOR	
		CONNECTOR(S)&SOCKET(S)	
CN201	RJT057W007	CONNECTOR(7P)	
CN201A	RJU057W007	SOCKET(7P)	
CN202	RJT057W007	CONNECTOR(7P)	
CN202A	RJU057W007	SOCKET(7P)	
CN402	RJT003K006M1	CONNECTOR(6P)	
CN402A	RJU003K006M1	SOCKET(6P)	
CN501	RJT003K010M1	CONNECTOR(10P)	
CN502	SJS50378JQ	SOCKET(3P)	
CN601	RJS1A1705	CONNECTOR(5P)	
CN604	RJS1A1703	CONNECTOR(3P)	
CN651	SJT3213	CONNECTOR(2P)	
CN701	RJS1A1705	CONNECTOR(5P)	
CN751	SJS305-1	CONNECTOR(3P)	
CN901	RJT003K008M1	CONNECTOR(8P)	
CN901A	RJU003K008M1	SOCKET(8P)	
CN902	RJT003K008M1	CONNECTOR(8P)	
CN902A	RJU003K008M1	SOCKET(8P)	
CN903	RJT003K008M1	CONNECTOR(8P)	
CN903A	RJU003K008M1	SOCKET(8P)	

Ref. No.	Part No.	Part Name & Description	Remarks
CN904	RJT003K008M1	CONNECTOR (8P)	
CN904A	RJU003K008M1	SOCKET (8P)	
CN905	RJT003K008M1	CONNECTOR (8P)	
CN905A	RJU003K008M1	SOCKET (8P)	
CN906, 907	SJT30648BB1	CONNECTOR (6P)	
CN908	SJT30549BB1	CONNECTOR (5P)	
CN401A	SJT3213	CONNECTOR (2P)	
CN501A	RJU003K010M1	SOCKET (10P)	
CN502A	SJT30345JQ	CONNECTOR (3P)	
CN602A	RJS1A1704	SOCKET (4P)	
CN701A	RJS1A1705	CONNECTOR (5P)	
CN906A	SJS50681BB	SOCKET (6P)	
CN907A	SJS50681BB	SOCKET (6P)	
CN908A	SJS50581BB	SOCKET (5P)	
CN401B	SJT3213	CONNECTOR (2P)	
CN602B	RJS1A1704	SOCKET (4P)	
		SIELD PART (S)	
E401	SNE1004-1	GND PLATE	
E404	SME103-6	P. C. B. HOLDER	
E601	SNE1004-1	GND PLATE	
E701, 702	EYF52BC	FUSE HOLDER	
E901	RSC0111	SIELD PLATE	

Ref. No.	Part No.	Part Name & Description	Remarks
		JACK (S)	
HP601	SJJ146B	JACK, HEADPHONE	
JK101	RJH4202	JACK, ANTENNA	
JK401	SJF3069N	JACK, PHONO/CD	
JK402	SJF3069N	JACK, VCR1	
JK403	SJF3069N	JACK, TAPE	
JK405	SJFK5-1	JACK, VCR2	
JK406	SJFD7-4	JACK, VIDEO OUT	
JK601	RJR0054A	JACK, SPEAKER	
JK602	RJR0054A	JACK, SPEAKER	
JK793	SJS9231-1B	JACK, AC INLET	⚠
JK891	RJJ33TR01	JACK, REMOTE CONTROL OUT	
		RELAY (S)	
RL751	RSY0005-1C	RELAY	⚠
		FRONT END PACK ASS'Y	
TN101	SNVFE337G01	FM FRONT END	

■ PACKING



RESISTORS & CAPACITORS

Notes : * Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R101, 102	ERDS2TJ103	1/4W 10K
R104	ERDS2TJ102	1/4W 1K
R105	ERDS2TJ561	1/4W 560
R106	ERDS2TJ562	1/4W 5.6K
R107	ERDS2TJ103	1/4W 10K
R108	ERDS2TJ151	1/4W 150
R201	ERDS2TJ822	1/4W 8.2K
R202	ERDS2TJ474	1/4W 470K
R203	ERDS2TJ331	1/4W 330
R204	ERDS2TJ824	1/4W 820K
R205	ERDS2TJ271	1/4W 270
R206	ERDS2TJ561	1/4W 560
R207	ERDS2TJ822	1/4W 8.2K
R208	ERDS2TJ102	1/4W 1K
R209	ERDS2TJ471	1/4W 470
R210	ERDS2TJ332	1/4W 3.3K
R211	ERDS2TJ222	1/4W 2.2K
R212	ERDS2TJ153	1/4W 15K
R213	ERDS2TJ104	1/4W 100K
R214	ERDS2TJ824	1/4W 820K
R215	ERDS2TJ822	1/4W 8.2K
R216	ERDS2TJ563	1/4W 56K
R217	ERDS2TJ223	1/4W 22K
R218	ERDS2TJ123	1/4W 12K
R219	ERDS2TJ562	1/4W 5.6K
R220	ERDS2TJ103	1/4W 10K
R221	ERDS2TJ104	1/4W 100K
R222	ERDS2TJ473	1/4W 47K
R223	ERDS2TJ154	1/4W 150K
R224	ERDS2TJ223	1/4W 22K
R227	ERDS2TJ104	1/4W 100K
R228	ERDS2TJ123	1/4W 12K
R229	ERDS2TJ102	1/4W 1K
R230	ERDS2TJ104	1/4W 100K
R231	ERDS2TJ471	1/4W 470
R232	ERDS2TJ122	1/4W 1.2K
R233	ERDS2TJ684	1/4W 680K
R234	ERDS2TJ103	1/4W 10K
R235	ERDS2TJ471	1/4W 470
R236	ERDS2TJ183T	1/4W 18K
R238	ERDS2TJ471	1/4W 470
R240	ERDS2TJ152	1/4W 1.5K
R247	ERDS2TJ103	1/4W 10K
R301	ERDS2TJ333	1/4W 33K
R302	ERDS2TJ151	1/4W 150
R303, 304	ERDS2TJ223	1/4W 22K
R305, 306	ERDS2TJ272T	1/4W 2.7K
R307, 308	ERDS2TJ562	1/4W 5.6K
R309	ERDS2TJ124T	1/4W 120K
R311	ERDS2TJ102	1/4W 1K
R312	ERDS2TJ153	1/4W 15K
R313, 314	ERDS2TJ473	1/4W 47K
R315, 316	ERDS2TJ103	1/4W 10K
R317	ERDS2TJ473	1/4W 47K
R321, 322	ERDS2TJ153	1/4W 15K
R325, 326	ERDS2TJ102	1/4W 1K
R401, 402	ERDS2TJ332	1/4W 3.3K
R403, 404	ERDS2TJ822	1/4W 8.2K
R405, 406	ERDS2TJ470	1/4W 47
R407, 408	ERDS2TJ473	1/4W 47K
R411, 412	ERDS2TJ104	1/4W 100K
R413, 414	ERDS2TJ102	1/4W 1K
R417, 418	ERDS2TJ104	1/4W 100K
R421	ERDS2TJ332	1/4W 3.3K
R451, 452	ERDS2TJ391	1/4W 390
R453, 454	ERDS2TJ224T	1/4W 220K
R455, 456	ERDS2TJ563	1/4W 56K
R457, 458	ERDS2TJ271	1/4W 270
R459, 460	ERDS2TJ680T	1/4W 68
R461, 462	ERDS2TJ184T	1/4W 180K
R463, 464	ERDS2TJ123	1/4W 12K
R465, 466	ERDS2TJ563	1/4W 56K
R467, 468	ERDS2TJ102	1/4W 1K
R471, 472	ERDS2TJ104	1/4W 100K
R473, 474	ERDS2TJ474	1/4W 470K
R475, 476	ERDS2TJ392T	1/4W 3.9K
R479, 480	ERDS2TJ223	1/4W 22K
R481, 482	ERDS2TJ392T	1/4W 3.9K
R483, 484	ERDS2TJ222	1/4W 2.2K
R485, 486	ERDS2TJ473	1/4W 47K
R487, 488	ERDS2TJ122	1/4W 1.2K
R489, 490	ERDS2TJ821	1/4W 820
R501, 502	ERDS2TJ222	1/4W 2.2K
R503, 504	ERDS2TJ103	1/4W 10K
R513, 514	ERDS2TJ393	1/4W 39K
R515, 516	ERDS2TJ222	1/4W 2.2K
R517, 518	ERDS2TJ102	1/4W 1K
R520	ERDS2TJ394	1/4W 390K
R521	ERDS2TJ104	1/4W 100K
R522	ERDS2TJ103	1/4W 10K
R522A	ERDS2TJ153	1/4W 15K
R523, 524	ERDS2TJ221	1/4W 220
R525, 526	ERDS2TJ102	1/4W 1K
R527	ERDS2TJ394	1/4W 390K
R528	ERDS2TJ104	1/4W 100K
R529	ERDS2TJ222	1/4W 2.2K
R531, 532	ERDS2TJ153	1/4W 15K
R533, 534	ERDS2TJ331	1/4W 330
R601, 602	ERDS2TJ102	1/4W 1K
R603, 604	ERDS2TJ563	1/4W 56K
R605, 606	ERDS2TJ332	1/4W 3.3K
R607, 608	ERDS2TJ563	1/4W 56K
R609, 610	ERDS2TJ470	1/4W 47
R611, 612	ERDS1FVJ100T	1/2W 10 ⚠
R614	ERD25FJ470	1/4W 47 ⚠
R619, 620	ERG1ANJ331	1W 330
R623	ERDS2TJ684	1/4W 680K
R624	ERDS2TJ103	1/4W 10K ⚠
R627	ERDS2TJ154	1/4W 150K
R628	ERDS2TJ684	1/4W 680K
R651-654	ERDS2TJ223	1/4W 22K
R655	ERDS2TJ392T	1/4W 3.9K
R656, 657	ERDS2TJ103	1/4W 10K
R658	ERDS2TJ223	1/4W 22K
R659, 660	ERDS1FVJ680T	1/2W 68 ⚠
R671, 672	ERDS2TJ471	1/4W 470
R673, 674	ERDS2TJ222	1/4W 2.2K
R675, 676	ERDS2TJ102	1/4W 1K
R681, 682	ERDS2TJ222	1/4W 2.2K
R683, 684	ERDS2TJ102	1/4W 1K
R687, 688	ERDS2TJ102	1/4W 1K
R689, 690	ERDS2TJ221	1/4W 220
R701	ERDS1FVJ332T	1/2W 3.3K ⚠
R702	ERDS2TJ122	1/4W 1.2K ⚠
R703	ERDS2TJ272T	1/4W 2.7K
R704	ERDS2TJ222	1/4W 2.2K
R705	ERDS2TJ272T	1/4W 2.7K
R708	ERDS1FJ330	1/2W 33 ⚠
R710	ERDS2TJ272T	1/4W 2.7K
R711	ERDS2TJ1R8T	1/4W 1.8
R713	ERDS2TJ183T	1/4W 18K ⚠
R715	ERDS2TJ101	1/4W 100 ⚠
R716	ERDS2TJ222	1/4W 2.2K ⚠
R717	ERD25FVJ150T	1/4W 15 ⚠
R718, 719	ERDS2TJ1R8T	1/4W 1.8 ⚠
R753, 754	ERDS2TJ472	1/4W 4.7K
R755	ERDS2TJ102	1/4W 1K
R771, 772	ERDS1FVJ5R6T	1/2W 5.6 ⚠
R773	ERD25FVJ4R7T	1/4W 4.7 ⚠
R777	ERD25FVJ8R2T	1/4W 8.2 ⚠
R780	ERDS1FVJ220T	1/2W 22 ⚠
R851	ERDS1FVJ2R2T	1/2W 2.2 ⚠
R891	ERDS2TJ102	1/4W 1K
R894	ERDS2TJ102	1/4W 1K

Ref. No.	Part No.	Values & Remarks
R895	ERDS2TJ103	1/4W 10K
R901	ERDS2TJ152	1/4W 1.5K
R902	ERDS2TJ105T	1/4W 1M
R903	ERDS2TJ563	1/4W 56K
R904	ERDS2TJ123	1/4W 12K
R905	ERDS2TJ103	1/4W 10K
R906	ERDS2TJ334	1/4W 330K
R907	ERDS2TJ681	1/4W 680
R910	ERDS2TJ122	1/4W 1.2K
R913, 914	ERDS2TJ101	1/4W 100
R915	ERDS2TJ331	1/4W 330
R916	ERDS2TJ104	1/4W 100K
R919, 920	ERDS2TJ122	1/4W 1.2K
R921	ERDS2TJ103	1/4W 10K
R922	ERDS2TJ224T	1/4W 220K
R923-925	ERDS2TJ331	1/4W 330
R946	ERDS2TJ222	1/4W 2.2K
R947	ERDS2TJ103	1/4W 10K
R948	ERDS2TJ221	1/4W 220
R949	ERDS2TJ472	1/4W 4.7K
R950-954	ERDS2TJ562	1/4W 5.6K
		CAPACITORS
C101, 102	ECBT1H150JC5	50V 15P
C103	ECBT1H102KB5	50V 1000P
C104	ECBT1H181KB5	50V 180P
C105	ECEA0JU221	6.3V 220U
C106	ECKR1H103ZF5	50V 0.01U
C107	ECKT1H223ZF	50V 0.022U
C108	ECEA25M4R7R	25V 4.7U
C109	ECEA1CU330	16V 33U
C110, 111	ECBT1H102KB5	50V 1000P
C201, 202	ECKR1H103ZF5	50V 0.01U
C204	ECBT1H470J5	50V 47P
C205	ECKT1H223ZF	50V 0.022U
C206	ECBT1H150JC5	50V 15P
C207	ECBT1C103MS5	16V 0.01U
C208	ECEA0JU101B	6.3V 100U
C209	ECEA1CK100B	16V 10U
C210-212	ECKT1H223ZF	50V 0.022U
C213	ECBT1H101KB5	50V 100P
C214	ECEA1CK100B	16V 10U
C215	ECKR1H103ZF5	50V 0.01U
C216	ECEA1CK100B	16V 10U
C217	ECEA1HK2R2B	50V 2.2U
C220	ECEA1CK100B	16V 10U
C221	ECFR1E183KR	25V 0.018U
C222	ECQM1H473JZ	50V 0.047U
C225	ECBT1H180JC5	50V 18P
C226	ECKR1H103ZF5	50V 0.01U
C227	ECEA1CK100B	16V 10U

Ref. No.	Part No.	Values & Remarks
C228	ECBT1H100JC5	50V 10P
C229	ECBT1H102KB5	50V 1000P
C230	ECBT1H471KB5	50V 470P
C301	ECEA1CU101	16V 100U
C302	ECEA1HKR47	50V 0.47U
C303	ECEA1HK010B	50V 1U
C304-306	ECEA1HK3R3	50V 3.3U
C307, 308	ECFR1E392KR	25V 3900P
C309	ECKT1H223ZF	50V 0.022U
C310	ECFR1E473KR	25V 0.047U
C311	ECQP1471JZ	50V 470P
C312	ECEA1VK4R7	35V 4.7U
C313, 314	ECBT1H102KB5	50V 1000P
C321	ECEA1CK100B	16V 10U
C323, 324	ECFR1E332KR	25V 3300P
C325	ECBT1H330J5	50V 33P
C326	ECKR1H103ZF5	50V 0.01U
C327	ECBT1H102KB5	50V 1000P
C401, 402	ECKR1H103ZF5	50V 0.01U
C407, 408	ECBT1H101KB5	50V 100P
C409, 410	ECKR1H103ZF5	50V 0.01U
C411, 412	ECEA1VPS4R7	35V 4.7U
C415, 416	ECKR1H103ZF5	50V 0.01U
C417	ECBT1H121KB5	50V 120P
C419	ECEA0JU101B	6.3V 100U
C421, 422	ECEA1CPS220	16V 22U
C425	ECBT1H101KB5	50V 100P
C451, 452	ECEA1VPS4R7	35V 4.7U
C453, 454	ECBT1H101KB5	50V 100P
C455, 456	ECBT1H102KB5	50V 1000P
C457, 458	ECFR1E223KR	25V 0.022U
C459, 460	ECFR1E682KR	25V 6800P
C461, 462	ECEA1VPS4R7	35V 4.7U
C463, 464	ECEA0JPS330	6.3V 33U
C471, 472	ECBT1H270J5	50V 27P
C473, 474	ECBT1H820KB5	50V 82P
C475, 476	ECBT1H221KB5	50V 220P
C477, 478	ECEA1CK100B	16V 10U
C479, 480	ECFR1E123KR	25V 0.012U
C481, 482	ECFR1E683KR	25V 0.068U
C483, 484	ECFR1E562KR	25V 5600P
C485, 486	ECFR1E273KR	25V 0.027U
C487, 488	ECKR1H103ZF5	50V 0.01U
C501, 502	ECBT1H331KB5	50V 330P
C503, 504	ECFR1E333KR	25V 0.033U
C513, 514	ECEA1VPS4R7	35V 4.7U
C516	ECEA1HK3R3	50V 3.3U
C520, 521	ECKR1H103ZF5	50V 0.01U
C523, 524	ECBT1H330J5	50V 33P
C601, 602	ECEA1VPS4R7	35V 4.7U
C603, 604	ECKR1H391KB5	50V 390P
C605, 606	ECEA1CPS220	16V 22U

Ref. No.	Part No.	Values & Remarks
C607, 608	ECCR1H120K5	50V 12P
C609, 610	ECKD1H681KB	50V 680P
C611, 612	ECKT1H223ZF	50V 0.022U
C614	ECEA1HU330	50V 33U
C615	ECEA2AU100	100V 10U
C651	ECEA1CPS100	16V 10U
C671, 672	ECBT1H180JC5	50V 18P
C673, 674	ECBT1H221KB5	50V 220P
C675, 676	ECBT1H101KB5	50V 100P
C677, 678	ECBT1H331KB5	50V 330P
C679, 680	ECBT1H101KB5	50V 100P
C685, 686	ECBT1H101KB5	50V 100P
C687, 688	ECKR1H103ZF5	50V 0.01U
C689, 690	ECKT1H101KB	50V 100P
C691, 692	ECKR1H103ZF5	50V 0.01U
C693, 694	ECKR1H331KB5	50V 330P
C695, 696	ECBT1H331KB5	50V 330P
C697, 698	ECBT1H101KB5	50V 100P
C701, 702	ECES1HV822UZ	50V 8200U ⚠
C703	ECKR1H103ZF5	50V 0.01U ⚠
C704	ECEA1VU101B	35V 100U ⚠
C705	ECEA1CU101	16V 100U
C706	ECKR1H103ZF5	50V 0.01U
C709	ECKR1H103ZF5	50V 0.01U ⚠
C710	ECKR1H103ZF5	50V 0.01U
C711	ECEA1CU101	16V 100U
C712	ECEA1VU470	35V 47U ⚠
C713	ECEA0JU101B	6.3V 100U
C751	ECEA1CU102	16V 1000U
C752	ECEA1CU470	16V 47U
C753, 754	ECKR1H103ZF5	50V 0.01U
C755	ECBT1H221KB5	50V 220P
C756	ECEA1CPS220	16V 22U
C771	ECQE1104KF3	100V 0.1U ⚠
C791	ECKWKC103PF2	400V 0.01U ⚠
C851, 852	ECEA0JU101B	6.3V 100U
C853, 854	ECFR1E104KR	25V 0.1U
C891	ECFR1E392KR	25V 3900P
C901, 902	ECEA0JU102	6.3V 1000U
C903	ECEA1HK010B	50V 1U
C905	ECKR1H331KB5	50V 330P
C906	ECEA0JU471	6.3V 470U
C910	ECKR1H103ZF5	50V 0.01U
C911-913	ECEA1HK3R3	50V 3.3U
C914	ECEA1VK100B	35V 10U
C915	ECEA1VU101B	35V 100U
C916	ECEA0JU102	6.3V 1000U
C917	ECEA0JU101B	6.3V 100U
C919	ECEA1HK3R3	50V 3.3U
C922	ECKR1H331KB5	50V 330P
C924	ECKR1H103ZF5	50V 0.01U

Printed in Japan
H900602600 YY/TN

ORDER NO. AD9210347S2

Service Manual

Receiver

Supplement

QUARTZ Synthesizer

SA-GX200L ...[LW/MW/FM] Stereo Receiver

SA-GX200 ...[AM/FM]

SA-GX200
SA-GX200L

Please file and use this supplement manual together with the service manual for Model No. SA-GX200, Order No. AD9006197C2 (EG) and Model No. SA-GX200L, Order No. AD9004087C2 (E, EB).

Note: This supplement is intended to provide additional information or corrections to the existing service manual for model No. SA-GX200 and SA-GX200L. Be sure to update your service manual for future reference.

Colour

(K) ... Black Type

Area

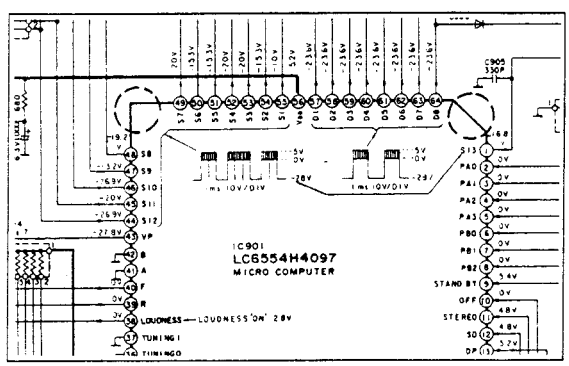
Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	
(EG)	Germany & Italy.	

CORRECTION

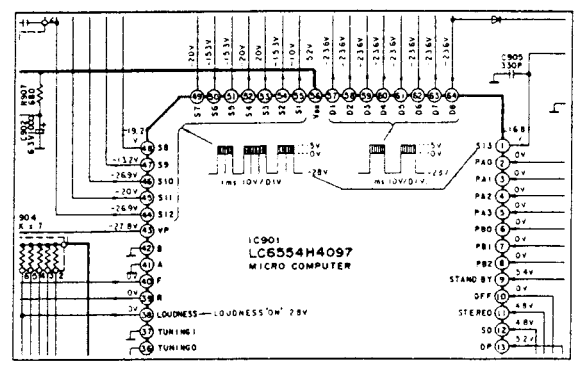
■ SCHEMATIC DIAGRAM

C FL DRIVE CIRCUIT (on page 23.)

INCORRECT

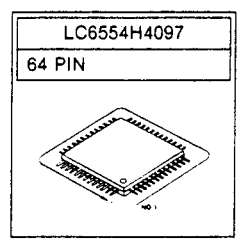


CORRECT

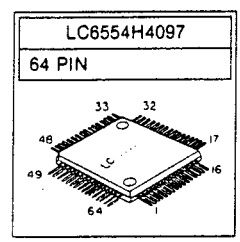


■ TERMINAL GUIDE OF IC'S (on page 19.)

INCORRECT



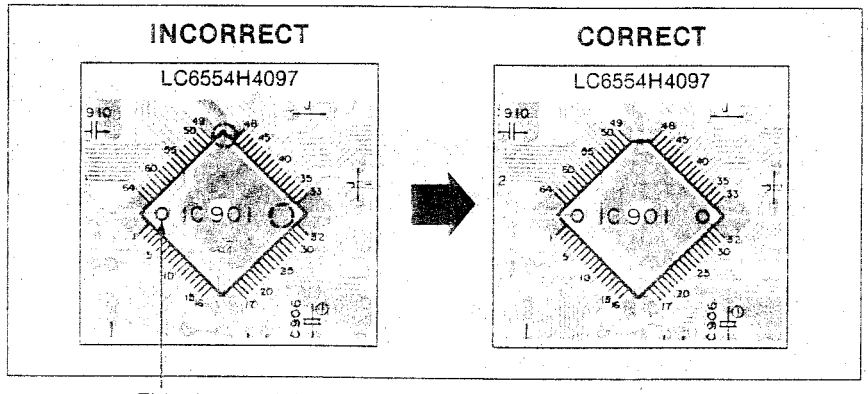
CORRECT



Technics

PRINTED CIRCUIT BOARD [on page 29. .... SA-GX200 / on page 32. .... SA-GX200L]

C FL DRIVE P.C.B.



This dott mark is only printed on SA-GX200 service manual.

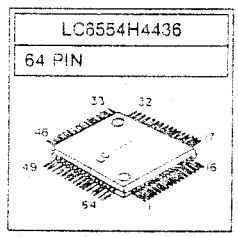
CHANGE

CHANGE IN REPLACEMENT PARTS LIST [on page 37. .... SA-GX200 / on page 40. .... SA-GX200L]

* Part No. LC6554H4097 has been changed to LC6554H4436. Refer to the following terminal guide of ICs, schematic diagram and printed circuit board.

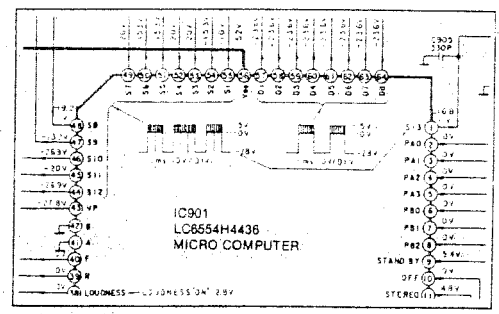
Ref. No.	Change of Part No. ORIGINAL → NEW		Part Name & Description	Remarks
INTEGRATED CIRCUIT(S)				
IC901	LC6554H4097	LC6554H4436	I.C, MICRO COMPUTER	

TERMINAL GUIDE OF IC'S



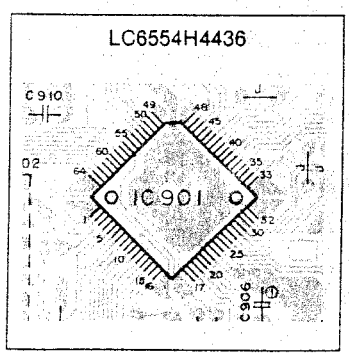
SCHEMATIC DIAGRAM

C FL DRIVE CIRCUIT



PRINTED CIRCUIT BOARD

C FL DRIVE P.C.B.



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